

# 73 Magazine Information

*A rather insane project... by KB9MWR*

## Overview

[73 Magazine](#) (also known as *73 Amateur Radio Today*) was an amateur radio magazine that was published from October 1960 to [September 2003](#). (That's 514 issues, with about 8619 articles, and over 64,000 pages). It was known for its strong emphasis on technical articles and for the lengthy editorials in each issue by its founder and publisher, [Wayne Green](#) (W2NSD).

Prior to beginning his own publications, [Wayne Green](#) started an amateur radio teletype newsletter. Within a couple of years, he had 2,000 subscribers. He also was an editor of [CQ Amateur Radio](#) magazine for five years before starting his own magazine.

He launched 73, a competing magazine, which promoted emerging technologies as do-it-yourself projects. A pioneer promoter of SSB, FM, solid-state, easy construction projects, and the marriage of personal computing and amateur radio. (Wayne's interest in microcomputing led him to found several of the early [personal computing](#) magazines.)

Starting in the early 1960s with an army of can-do, build-it-yourself amateur radio fans behind him, [Wayne Green](#) encouraged readers of *73 Magazine* (his first and longest-lived publication), to push the limits on the electronic bits and pieces that would evolve into today's e-mail systems, cellular networks and PCs.

He predicted the rise of the "pico" computer, better known as the laptop. And he encouraged his readers to build a grass-roots wireless telephony network -- a nationwide array of amateur radio repeater towers that was the precursor to today's cellular networks.

For him, only what's ahead matters. *"I'm always impatient with [the pace of] new technologies. I live mostly in the future,"* he says.

Some people have described [Wayne Green](#) as a visionary and entrepreneur. He actually taught people to think.

For more info see: [Tech Visionary and Byte Magazine Founder Wayne Green on Changing the World](#)

There is also an episode of the [QSO Ham Radio Talkshow](#) podcast by Ted Randall which has an interview with Wayne Green: [Wayne Green Interview - Aug. 27, 2009](#). (48M MP3)

## Archives

Many hams have been searching for reprints or back issues floating around. I contacted Wayne to see if there was any type of CD-ROM or other archive of his magazine. He said he didn't know of any source other than scanning in over 50,000 pages. Which he thought was daunting to sell maybe dozens of CDs.

However, [Buckmaster](#) was one of the first to have microfilmed, and later, [scanned issues](#) of the magazine. From what I have found, the microfilmed versions advertised for sale over the years were purchased by most major technical colleges. So, never fear, it is out there as several university libraries still have it available.

References:

- [Buckmaster Archive](#) Buckmaster microfilmed various amateur radio magazines, including 73.
- [National Archive Publishing Company](#) Still sells the microfilmed magazine archive, but at a rather expensive price.
- Quote from KA0GKT/7 at <http://www.eham.net/forums/Elmers/97816>:

*"...the [University of Arizona Science and Engineering Library](#) has back issues of QST, 73 and CQ magazines either in paper form or on microfiche or as PDF files. The PDF files are available via the internet only to students and faculty."*

Sadly it doesn't look like there will ever be an official digital archive of this magazine available for purchase. With [current law](#) copyrights expire after author's lifespan plus 70 years. And the [courts rulings on CD-ROMs Of Magazine Archives](#) have been mixed.

73 usually only bought first publication rights and sometimes first reprint rights. One would have to get the permission of every author who had written for 73 Magazine in order to make a CD-ROM collection available. Wayne sold 73 a couple times which further complicates the matter. The transfer of copyright agreements is unclear slippery slope due to the various royalty and copyright issues that existed between contributing authors and 73 Magazine. ([ref](#))

However, many authors have said they are okay with having their articles reprinted as long as its at no charge. As I have said before, [it is out there](#), but you'll have to use your conscience to as a guide to whether or not obtaining such an archive is legal, moral, and/or ethical.

## Update Dec 2011

An Christmas gift was bestowed upon us. The Internet Archive received a voluntary contribution to the public domain by 73 magazine publisher, Wayne Green W2NSD.

Magazine articles were scanned, quality corrected, and index by an army of individuals, and collected together for Internet Archive by Jason Scott of [textfiles.org](#)

[Archive.org](#) was started by internet pioneer Brewster Kahle in 1996, with the goal of archiving internet history. While the resulting "Wayback Machine" is one of their best known projects, the Archive also engages in curated projects, such as the recent archive of all TV coverage on 9/11/01 at [september11.archive.org](#).

The 73 Magazine Collection on the Internet Archive can be found here:

<http://www.archive.org/details/73-magazine>

## Other Indexes

Concerning a searchable master index of articles. Didah Publishing shows up as having developed a 73 Magazine index (through 1990) computer program and book under the title "From Beverages thru OSCAR - A Bibliography."

- [WorldCat](#)
- [OpenLibrary](#)
- [Alibris](#)
- [Amazon](#) Used copies show up from time-to-time.
- [AbeBooks.co.uk](#)

[OCLC](#) shows that there are three libraries which have that 73 Magazine index, they are:

- US, CA LOS ANGLES PUB LIB Code LPU

- US, DC LIBRARY OF CONGRESS Code DLC
- US, NC BAKER & TAYLOR INC TECH SERV & PROD DEV Code BTCTA

Here is quote about Didah Publishing's bibliography program:

*Q: I'm going to be building a big stack of magazines! Can I get an index for our collection?*

**A:** There is no single comprehensive index to all amateur radio and electronics literature. The best thing you can do is check the year-end issues. You can also purchase a bibliography computer program called "From Beverages Thru OSCAR," published by Didah Publishing. By entering a key word in the article description, you can search for articles on nearly every subject and locate the issue you need. The database is very comprehensive, covering many amateur radio general-interest and specialty magazines. Didah also publishes smaller, less-expensive software packages for each of most popular ham magazines. Some of their bibliographies are available in printed form, too. Contact Didah Publishing at P.O. Box 7368, Nashua, NH 03060, (telephone 603-878-3628). You used to be able to buy the complete "From Beverages Thru OSCAR" software package (a DOS program written by Rich Rosen, K2RR) from [ARRL Headquarters](#) for \$79.

Rich Rosen's QRZ [profile](#) states:

*"I created 'From Beverages Thru OSCAR - A Bibliography' after literally reading every page from QST (Jan. '45-'90), CQ (Jan. '45-'92), Ham Radio (Mar. '68-Jun '90), 73 (Oct. 1960 - Dec. '90), and RadCom (Jan. '79-Dec '90). When I retire (soon), will bring entire database up to date, from QST issue 1 (Dec. 1915) and continue."*

The following preface describes his work and wonderful resource. The printed *73 Magazine* index from 1960-1990 is about 100 pages. I suggest contacting him if this or his software would be useful to you.

"From Beverages Thru OSCAR - A Bibliography" is a 52,880 reference volume to articles written on all aspects of radio communications. The term radio communications is defined by this book in a much broader sense. It encompasses the early days of radio, at the turn of the century, in which wireless transmissions were the only form of communications. But it doesn't stop there. It continues through the 20th century to include the more advanced forms of data communications.

The title "From Beverages Thru OSCAR..." tells a story. Beverage is a long wire antenna that was developed in the early 20s. It, and similar type antennas made it possible to clearly receive radio signals from across the Atlantic. This antenna has stood the "test of time" and is used today by radio amateurs, commercial services and the military. OSCAR stands for Orbiting Satellite Carrying Amateur Radio. It's a series of satellites that enable radio amateurs to communicate through a small handheld unit to others half way around the world.

Amateur radio, is what this book is about. At least that was the initial impetus that urged me to put this massive compendium together. Radio amateurs, of which I'm proud to include myself among their rank, number almost a half million strong in the United States and are found in literally every other country in the world. They are a disparate group, speaking collectively hundreds of different languages and working in an even greater number of diverse professions. Many who have chosen to delve into the technical mysteries of radio have contributed immensely. Think of any major technological breakthrough in the field of communications and the probability is great that there were at least several radio amateurs present, advancing the state of the art. In many famous cases amateur radio discoveries were made prior to even commercial interest involvement

However, only a small percentage of radio "amateurs" publish their findings in the

professional and radio journals. Instead they employ consumer magazines (*QST*, *CQ*, *Ham Radio*, *73*, and *Radio Communication*) as a conduit to express their ideas. This very fact has driven me to uncover this wealth of knowledge so that others might benefit. The production of "From Beverages Thru OSCAR" involved the meticulous examination of 231,173 pages from 1,776 issues of these magazines. Names that have meaning to many in the professional world jump out from those pages: Armstrong, the inventor of FM; Brown, Kraus, King, Lewis, and Schelkunoff legends in the field of antenna theory; Friis, Lamb, Rohde, Tuska, and Villard in receiver design, to name a few. These giants in the field of communications have either published in the magazines or greatly influenced the writings and efforts of others.

Related contributions in the professional annuals such as the *Bell System Technical Journal*, *Proceedings of the IEEE*, and *Transaction on Antennas and Propagation* are referenced as well.

Access to Columbia University's Engineering Library with its immense open-shelf collection of technical journals provided me the opportunity to spend countless pleasurable hours researching communications topics. Fifteen years of a page-by-page scrutiny embodies this bibliography.

It is a unique tome, definitely at least in the sense that it is the only one of its kind. My original intention was solely to locate a reference volume that included the amateur radio sources. After a considerable search none was found. Casual lists of articles of interest just would not suffice for several reasons. First structure was needed to put some order to this information. Lack of the same had been my major complaint of previous lists that I had casually generated. But perhaps more importantly, I found myself expanding my areas of interest at an accelerating pace. Many interesting articles that I had accidentally come across were too precious to let slide back into the closed pages of some dusty volume.

A workable format was developed in several months. Though New York City certainly has its share of fine technical libraries, I knew that I needed to have more immediate access to at least the amateur radio journals. The acquisition of entire collections of those magazines became a project in its own right. As the expression goes, the rest is history - culminating in this 1,260 page communications reference volume.

For those of us who have ever become frustrated in looking through indices of article titles without being able to decipher the subject matter - this bibliography is for you. Don't expect to find catchword phrases within. Each article reference contains a short abstract that clearly indicates the theme. Anyone who works nine years as a technical editor and reviews over a quarter of a million pages should have the ability to quickly review articles and capture their essence in a few succinct words.

Expect it to be comprehensive. Each page of *QST* from January 1945 to present, and every page of *CQ*, *Ham Radio* and *73 Magazine* from their premiere issues were personally reviewed. In addition, selected references from 289 other sources have been included. Those sources are world-recognized journals, society reviews, trade magazines and technical publications from laboratories, agencies and industry. Most of them are available in the larger technical libraries or can be obtained on a loan basis. And what if you can't locate some of the sources? With an average of 575 article references per subject area anyone with even half of the sources should be able to acquire an in-depth knowledge of the subject.

References are entered in reverse chronological order, the most recent information appears first. Some subjects include references that go back 80 years. For example, in the area of propagation - chapter 5's first reference is March 1909! Naturally, more recent technical topics such as computers only include early references to articles published in the 1960s.

Earlier editions of this bibliography were published. The first: "From Beverages Thru OSCAR - A Bibliography" contained references through December 1978. The second edition: "From Beverages Thru OSCAR - A Bibliography, Addendum 1979-1981" was a three year update to the first volume. This latest rendition not only encompasses completely rewritten and reformatted earlier editions but contains new source and reference material as well. In addition it includes a 100 page 5,000 word keyword index and 23 page author index to assist the user in rapidly locating articles of interest.

Knowledge, generated by many, is similar to a country's untapped resources. It remains hidden beneath the surface of subtle or innocuous titles until the proper tool is found and utilized. This bibliography can be that tool.

## Index Information

What you see here is phase two of a long project. This index project was inspired by and dedicated to [Wayne Green](#), W2NSD himself. For the vast technical information in all his years of dedication to the publication and hobby. It is also inspired by the work of Rich Rosen, K2RR. And by Bill Griffith, VE3WGX for his [Ham Radio Magazine index](#) work. These three dedicated themselves, which prompted me to say, so can I.

A special thanks to the daughter of N9AVO/W9LML, Edward Harrigan (SK) who sparked my interest in the whole thing by donating a few decades of the magazine to our club years ago. Also thanks to Buckmaster for microfilming the magazine, the [Nicolet Federated Library System](#) and the interlibrary loan staff who helped me track these indexes down, and various other hams.

What follows is about a years worth of on and off work. This data was generated by scanning and OCR software, errors likely exist.

To the best of my knowledge it is now complete (December 4, 2009). This index is freely sharable, but please contact me if you plan to redistribute it commercially. It is meant as a free public resource for those who have stacks of these wonderful magazines in their basements (as I have).

Enjoy - [Steve](#), KB9MWR

# 73 Magazine Index

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## 1960

### **October 1960 (#1)**

- **Audio Booster** - A three transistor amplifier that hooks across the mike to give you more talk power for SSB or AM without distortion ..... K5JKX/6
- **Something New in FM** - Using the new varicap as a FM modulator ..... W7CSD 10

- **Bantam Converters** - Two-tube VHF converters for 50-108-144-152-220 MHz bands ..... W9DUT 12
- **Risky Hobby** - How to fall off your tower for fun and profit ..... K9AMD 16
- **Tubeless Electronic Key** - Just uses some relays. Also tells how to convert your bug ..... W1TUW 18
- **Digest of Surplus** - Short lecture tour through your local surplus emporium ..... W1MEG 20
- **Direct Reading Capacity Meter** - Two transistors. You've got a lot of resistance if you can keep from building this gadget ..... W6EAW 22
- **Gotta Patch?** - Instructions for phone patching and avoiding trouble ..... W6KNE 24
- **Three-Way Power Supply** - 6, 12, 120 volt supply using kit-available parts ..... W3UZN 26
- **Shock** - New facts on electric shock, or what to do until rigor mortis sets in ..... Bates 28
- **Propagation Charts** - What bands what time to where probably ..... K2IGY 30
- **Three Tubes, Five Watts, Six Meters** - How to get on Six in a hurry ..... K8NIC/5 32
- **How To Be An Amateur** - For adults only. Children under 16 not admitted ..... W2ZGU 34
- **Testing the Heath GC-1A** - Well, well! A transistorized communications receiver! ..... 73 Staff 38
- **Modulation Fundamentals** - This is our big technical article for the month ..... W0TKU 42

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## November 1960 (#2)

- **Transistorized 10 Meter Converter** - Not only that, but it uses a printed circuit you can make ..... W3BUL 9
- **Four Band Crystal Converter** - 20-15-10-6 meters using the new International Crystal converters ..... W3UZN 12
- **FM VFO Exciter** - Butchered BC-459 for 6 and 2 meter FM or NFM operation ..... W1TUW 14
- **Mobile Power** - How to put some beef into that mobile signal ..... K5JKX/6 16
- **Cardboard Chassis** - Building on the kitchen table... How easy can we make it? ..... K5JKX/6 18
- **Stop That Noise** - This is our technical article of the month: Noise Clipping, etc ..... 73 Staff 20
- **Measure Your Modulation** - Overlay for your 'scope to get modulation percentage ..... K5JKX/6 25
- **Some Hard Facts About Echo** - The Moon makes a better reflector ..... W6MMU 26
- **Improving Performance of the Communicator III** - A new front-end tube that improves the S/N considerably ..... W1MCA 28
- **VHF Tri-Mode Receiver** - AM-CW-SSB tuner to go with last month's Bantam Converters ..... W9DUT 30
- **Toroid Coils** - Quickie think article plus an idea on mounting 'em ..... Paffenbergs 37
- **\$5 Frequency Counter** - Two transistors and it reads 0-300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz ..... K5JKX/6& 38
- **Wabbit Ears** - 20 meter dipole, compacted slightly ..... W6EHY 41
- **Propagation Forecast** - What bands what time to where ...Probably ..... K2IGY 42
- **Equipment Manuals** - Special article for manufacturers ..... K2DHA 44
- **Finding True North** - How to zero in your beam on the North Star ..... W5LFM 49

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## December 1960 (#3)

- **Transistorized 220 MHz Converter** - Crystal controlled too ..... W3HIX 8
- **RF Sniffer** - Snooper sensitive RF detector which you will build ..... K5JKX/6 11
- **SSB Dynamic Demonstrator** - Teaching SSB calls for some tricky stratagems ..... W2UQB 12
- **Capacity Meter** - Two ranges : 0-40 pF (resolves 1 pF) and 0-900 pF ..... K8ERV 14
- **Station Control System** - Even if you don't build this one it will give you ideas ..... W1TUW 16
- **The Multivibrator in VOX Circuitry** - Technical article ending up with a corker of a VOX circuit ..... Paffenbergs 18
- **The Fine Art of Transistorizing** - Changing your tube circuits to transistors ..... K5JKX/6 22

- **Simplify Your Log Keeping** - Just an idea which you probably won't like anyway ..... Staff 25
- **Perfect Squelch** - Our big technical article for the month... all about squelching ..... Staff 26
- **Low-Noise Two Meter Converter** - The newest, the latest, the hottest 417A converter yet ..... ZL1AAX 32
- **Surplus Frequency Standard** - Simple conversion of the VO-4 oscillator. You'll like it ..... Paffenbergs 40
- **Simple Phone Patch Herb Brier** - This one is pretty simple and effective. Next month a simpler one ..... W9EGQ 42
- **New Tube Base Coil Forms** - OC3W, 5R4WGA. etc, bases make splendid coil forms ..... Paffenbergs 44
- **Propagation Forecast** - What bands what time to where... probably ..... K2IGY 50

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## 1961

### January 1961 (#4)

- **Nuvistor Converters for Six and Two** - 417A performance without 417A cost ..... K8ERV 8
- **Down With Drift** - Step-by-step stabilization of your receiver ..... K5JKX/6 12
- **6N2 Completed** - Eico, Heath, and Johnson kits add up to 100 watts on Six and Two ..... W3UZN 14
- **1296 MHz** - Secret confessions of an UHF addict ..... K2TKN 16
- **Goblin Patrol** - Hams team up with cops to louse up Halloween for the kids ..... W8UCY 18
- **Lost in a Tunnel** - Pioneering frustrations of a diode speilunker ..... K5JKX/6 20
- **8 MHz Crystal Modification Kit** - For thee who art long on 8 MHz rocks ..... W3UZN 24
- **Transistorized Frequency Standard** - Think of all the advantages ..... W7OE 26
- **Suction or Whoosh** - One is better, but you'll never know which unless you read the article ..... W6JAT 28
- **Transistorized Communications Receiver** - Just to show you what you can do if you really want to ..... OZ7BQ 30
- **Vertical Radiator** - To warm the ether, not your shack ..... W7OE 36
- **AM Detectors** - Our big technical article for the month. Guaranteed both interesting and informative ..... Staff 40
- **Switch from the T-17** - The fine art of surplus scavenging ..... Paffenbergs 51
- **Propagation Forecast** - What bands what time to where probably ..... K2IGY 52
- **Spot Frequency Operation of VHF Nets** - How to herd everybody on to the same channel ..... W0HKF 54
- **See-Saw Bleeder** - Save power and get better regulation this away ..... KV4CI 56

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### February 1961 (#5)

- **Rolling Your Own** - We're determined that you're going to build something ..... K5JKX/6 11
- **Amplifier for Varicap Modulator** - More for gain for the modulator in our October issue ..... W7CSD 16
- **World's Simplest Phone Patch** - Average construction time: five minutes ..... K5JKX/6 17
- **Two Meter Pip-Squeak** - Complete phone rig using only three 6CX8's ..... K6BP 18
- **Squawk** - Guaranteed Houser. We should needle Ken into writing more like this ..... W7IDF 20
- **Six Meter Converter** - For the car... Operates with only 12 volts on the plates ..... K5JKX/6 22
- **Heath Phone Patch** - Heath does it again. Works fine for SSB also. Hey Heath, where's the ads? ..... K2DHA 24
- **Life Insurance for Transistors** - These little rascals are delicate, so watch your step ..... K6EAW 26
- **Beat Generation** - Big technical article on SSB and CW detectors ..... Staff 28

- **Updating the Absorption Wavemeter** - Real handy piece of test gear, and easy to knock together ..... W3FQJ 34
- **Interference Chaser** - Easy way of getting audio break-thru out of TV sets and things ..... K5JKX/6 35
- **Getting the Most Out of Your Mobile Whip** - How to make the best of a miserable situation: a short vertical antenna ..... W4API 36
- **How Modern is the VFO?** - Not very ..... W7OE 38
- **EICO Grid Dip Oscillator** - Our Associate Editor is still building up kits and liking 'em ..... W3UZN 42
- **Power for the Pro** - Super-Pro owners, take note ..... K5JKX/6 44
- **Differential Switching** - Using polar relays for sensitive switching- at different current levels ..... Pafenberg 46
- **Propagation Charts** - What time to where on what bands... Probably ..... K2IGY 56

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## March 1961 (#6)

- **Translating Technical Journals** - You'll read this one to anyone who will listen ..... K5JKX/6 9
- **Transistorized Grid Dip Oscillator** - Severing the AC umbilical cord with a transistor ..... W3KET 10
- **Curing Ignition Interference** - Step-by-step assassination of the noisy car gremlins ..... W8UCG 13
- **Superregenerative Receivers** - Ten rules for getting good results from a super-regen illustrated ..... W5WGF 14
- **Decreasing Debugging Time** - How to get things back east when they go west.. In a hurry ..... K5JKX/6 16
- **Top Loaded Whip** - Why not make your own mobile whip? ..... W2IHW 18
- **CW Transmission with Teletype Equipment** - Simple conversion of RTTY or that hated CW identification by TT tape ..... Pafenberg 20
- **All Band Antenna** - You've been waiting for someone to adapt that Log Periodic Antenna ..... K5JKX/6 22
- **Double Your Power Supply Voltage** - Not difficult with a couple silicon rectifiers ..... W4API 24
- **Impedances of Surplus Equipment** - Input and output impedances for most popular surplus gear ..... Pafenberg 25
- **Patch Patch** - Quick method of hooking your phone patch in and out of the telephone line ..... K2DHA 26
- **432 MHz Transistorized Converter** - Good night! How high will they go with transistors? Crystal controlled too ..... W3HIX 27
- **Two Meter Transmitter** - Slight modification of the 6M rig from October issue of 73 ..... K8NIC/5 29
- **Squawk Box** - Transistorized loudspeaker amplifier ..... K5JKX/6 30
- **Up Front** - Rather thorough look at receiver front ends, our big technical article ..... Staff 32
- **Don't Bug Me Dad** - Our cover artist also writes. Instructions for new bug owners ..... W6NKE 38
- **Varicap Tuning Device** - Helps the blind ham to tune up his rig... Or anyone else for that matter ..... W7CSD 42
- **Noise Clipper, Semiconductor Style** - Tiny clipper for insertion in car radios, including transistor sets ..... W2IHW 43
- **Working 80 Meter Phone DX** - WAC in one night when you know where to listen ..... W1FRR 44
- **DC Transistorized Meter Amplifier** - Get amazing sensitivity out of normal meters with this amplifier ..... K6EAW 46
- **Motorola Test Set** - Ham-banding the old Motorola mobile transceivers is popular, this helps ..... W9HKA 48
- **Propagation Charts for March** - What time to where, when...probably ..... K2IGY 54
- **Names, Sines and Handles** - Why "YB" calls himself "YB" ..... W7OE 56

- **Save, Learn, Have Fun** - It really is cheaper to build than buy ..... W8VVD 62
- **How To File Your QSO's** - More ideas on card files for contacts ..... OH2YV 68

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## April 1961 (#7)

- **Six Meter Nuvistor Converter** - Two 6CW4's in cascade give a fearfully low noise figure ..... K8BYN 9
- **Power Meter** - Another valuable piece of test gear for the ham shack ..... K8ERV 12
- **Surge Protection in Reverse** - Protect your silicon diode power supply from destruction by shorting ..... Pafenberg 13
- **Let's Modulate, Not Crepitate** - Getting good modulation out of a Heising Modulator ..... K4ZGM 14
- **A New Noise Limiter** - Get out the soldering iron, this one'll go in your receiver ..... K5JKX/6 16
- **Calibration** - Why we haven't got it, how much we need it. And how to get it ..... W4WQT 18
- **Big Cannon** - OK, here's a 20M kW amplifier, now stop bothering us for that ..... W6VVZ 20
- **Tennessee Indians** - The public relations side of taming those Indians ..... K2SJN 25
- **Half Wave Feedlines** - One resonant feedline for several bands? Yup ..... W9HOV 27
- **Automation** - You didn't think we'd pass up April without one feature, did you? ..... K5JKX/6 28
- **Audio Boosting the Command Receivers** - Turns out to be ridiculously simple once you know how ..... K8HDR 30
- **Pick Up the Droop** - Your beam been saggy lately? ..... W7OE 31
- **40 Watt Transistor Modulator** - Great for mobile rigs ..... KL7DLC 32
- **Testing the Heath Two'er** - You will no doubt be flabbergasted to find that Don likes the Two'er ..... W3UZN 34
- **RF Noise Suppression** - Technical treatise on how to exorcise the noise demons from your car ..... K2TKN 38
- **432 MHz Transistorized Converter** - Part 2 (ahem) the schematic diagram ..... W3HIX 40
- **Take Your Pick** - Big technical article: IF selectivity and the devious means used to gain it ..... Staff 42
- **Propagation Charts for April** - What time, when, to where on what bands... Probably ..... K2IGY 54
- **Writing for 73** - How to get rich beyond your wildest dreams ..... Staff 56

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## May 1961 (#8)

- **G4 Zed Smith** - A tri-bander without loading coils or traps, can be tuned from the shack! ..... W8VVD 9
- **Feedline Economy** - Open-wire line just may become popular again after you read this one ..... W9HOV 18
- **Propagation Special Feature** - Taking a look at sunspot numbers with an eye to predictions ..... K2IGY 20
- **Testing the KT-200 Receiver** - Next month we have some of Bill Orr's ideas for modifying this receiver ..... K2DHA 22
- **Ham Calendar** - Just what we've been needing. Should go nicely with a 35 hour clock ..... K4YNO 25
- **Build a Vary-Volt** - A piece of test equipment that is worth its weight in something or other ..... W2WYM 26
- **Moonstruck** - Eyewitness account ..... W8GUE/6 28
- **Moon Chart** - How to get radio signals back from the moon, reduced to a chart ..... K2TKN 31
- **Sideband Exciter** - What with Turret construction and a simple circuit you may try this one ..... W2NQS 32
- **Testing the Knight GDO** - Porsche-pushing ham tests Knight GDO, likes it, tells all ..... W2OKU

- **Propagation Charts** - What time to where, when on what bands... Probably ..... K2IGY 36
- **Custom Resistors** - How to move precision resistors to the value you need ..... Pafenberg 38
- **AC Calibration of Your VOM** - We'll be giving you more and more on precision and calibration ..... Bentley 40
- **Ohms by the Yard** - This ties in with the precision resistors on page 38 ..... K5JKX/6 41
- **Blowers** - What size blower you need to keep a cool rig ..... W3KET 42
- **How Low The Fi** - Our technical article: examining the audio stages of your receiver ..... Staff 44

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## June 1961 (#9)

- **Abe Lincoln** - Two meter antenna for mobile or fixed. Looks awful, works great! ..... K2TKN 8
- **75M Transistorized Converter** - Nice little one evening construction project ..... WA6DZL 12
- **Precision Capacity Measuring** - Right down to a fraction of a pF ..... K6BJ 14
- **Propagation, Part 2** - When the sunspot null will really come and what it will be like ..... K2IGY 16
- **73 Tests the M-100 Modulator** - Just how good is that gate modulator put out by Electrotone? ..... W4API 20
- **AM Modulation Monitor** - A bit complicated, but great for perfectionists ..... W5SUC 24
- **Modifying the KT-200 Receiver** - Bill claims this is a real good deal with these few changes ..... W6SAI 30
- **Panadapting Adaptor, Part 1** - Moderately simple device connects your receiver to your 'scope ..... W6AOI 33
- **Automatic Drive Control** - Transistor device keeps you from over modulation. Clever ..... W5IUR 38
- **Dear Sir** - On writing to manufacturers about your miseries ..... K2DHA 39
- **FCC Notice** - Thought you'd get a kick out of this bit of antiquity ..... W8ONL 41
- **Do-it-Yourself IBM** - Punch a few holes and get some real mileage out of a card file ..... K5JKX/6 44
- **Power House Pros** - Part 1, all about power supplies ..... Staff 51
- **Propagation Chart** - DX men please note that this is the most accurate forecast in print ..... K2IGY 54
- **The DX Hunter** - Do's and don'ts for DX hunting ..... W6NKE 56

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## July 1961 (#10)

- **A Tinker-Toy for Two** - Two meter antennas made out of aluminum tubing and a Tinker-Toy set ..... K8LFI 8
- **Ready-Made Emergency Antenna** - New, improved type mobile antenna. Really works out! ..... W7CSD 12
- **Two Meter Line Amplifier** - Nuvistor pre-amplifier -for hottening up your two meter converter ..... Bullock 14
- **Amplitude Modulation Systems** - Review of AM systems with special reference to an oldie you'll like ..... W7CSD 18
- **Globular Calculations** - How to find out how far it is from anywhere to anywhere, great circle route ..... K5RPB 26
- **An S-Meter for Your Sixer** - Or your Tenner... Or your Tower. What? You don't have one? Heath advertises ..... K5VMC 28
- **VLF - Very Low Frequencies** - A converter for the 10-100 kHz band ..... W3QA 29
- **Little NIC Six Meter Converter** - Quite wee transistorized converter. You'll like. Real quick project for you ..... K8NIC/5 31
- **Panadapting Adaptor, Part 1!** - Construction and alignment details ..... W6AOI 33

- **Plate Modulate Your DX-40** - How to hook in an external modulator or more output from the DX-40 ..... K6UGT 39
- **Socket for the 4-1000A** - The tubes are available surplus, but the sockets ouch! Here's an answer ..... W4API 41
- **Frequency Measurement** - Measuring frequency with simple equipment ..... Henry 42
- **From My Side of the Counter** - Confession from the heart of Radio Row in New York City ..... W2BNW 44
- **Transistor Biasing Simplified** - The problem... The solution ..... K6EAW 45
- **Powerhouse Pros, Part 2** - Designing a power supply instead of throwing it together ..... Staff 48
- **Propagation Chart** - What bands when, to where ..... K2IGY 56
- **Band Edge Marker** - 3.5 MHz oscillator gives band edge marker for all ham hands ..... K1NFE 58
- **Transformer Action Demonstrator** - Very handy for schools and theory classes ..... W8KTJ 64

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## August 1961 (#11)

- **Frequency Deviation Meter** - Another little garget to build from the brain of one of the top hams of all time ..... K6BJ 6
- **Noise Limiter** - For the car. Transistorized, printed circuited, and the board is available ..... W3BUL 8
- **SSB vs. AM** - Year-by-year count of band occupancy by SSB and AM. (SSB is winning) ..... K0AXY 12
- **Square Antenna** - The Bi-Square is easy to build and works out beautifully ..... W8GUE/6 14
- **The Drake Receiver** - 73 rushes you info out the new Drake 2B. Amazing receiver, as you will see ..... Merritt 18
- **RTTY Converter** - Transistorized, printed circuit. Board available. Best yet ..... W5SFT 24
- **Two Meter Nuvistor - Cascode Converter** - If one Nuvistor is good, why obviously two are better. Obviously ..... WA2INM 28
- **Versatile Control Techniques** - Using those concentric TV controls in your ham rigs and receivers ..... W4WKM 32
- **Impedance Bridge** - A whopper construction article. Details on building "professional" equipment ..... K6CRT 33
- **Propagation, Part 3** - Antenna height and angle of radiation importance during the coming minimum ..... K2IGY 42
- **Simple as A-B-C** - Clarification (?) of the classes of amplifiers ..... K5JKX/6 44
- **The Romance of Dixie Dan** - One of the better ham poems from our Renaissance man ..... W6NKE 46
- **Propagation Charts for August** - What time to where, when, on what bands... Even inside the US... maybe ..... K2IGY 48
- **Four Kinds of Ham** - A general discussion of stuff you've read before. The Golden Rule again ..... K5JKX/6 50
- **Mobile Power Converters** - Transistor supply using filament transformers. Very clever... And cheap ..... W2BXE 54
- **73 Tests the Finney 6 & 2 Meter Beam** - Interesting invention. You'll want one if you read. Beware ..... W3UZN 56
- **New Look At Old Ideas About Antennas** - The old timers really knew what they were doing... We can learn a lot ..... K5JKX/6
- **Hiss, Sputter, or Crash** - Different types of noise and what to do about each of them ..... K5JKX/6 66
- **Portable kW Transistor XMTR** - Newly released (early April) transistor makes shoe box kW simple ..... K2PMM 72

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## September 1961 (#12)

- **Silicon Rectifiers** - How not to pop 'em, a lesson for hams and engineers alike ..... W1OOP 6
- **Tuning Bypass Condensers** - How to make a bypass bypass at the VHF's ..... K5JKX/6 8
- **Simplescope** - Perchance the title may give this one away. You need one. Build it ..... W0OPA 10
- **VFO Chirp vs. 6AU6** - Several VFO's use a 6AU6. Lousy choice, try a 6AH6 instead and see ..... K3KMO 20
- **Console** - If you're going to be obstinate enough not to buy an Alden Hambench, then build this ..... W9HKA 22
- **Class B Modulators** - We'll print anything ..... WA2INM 28
- **Eye for Resonance** - How confounded simple can a GDO get? This is how simple, that's how ..... K6EAW 30
- **Break-In *A la* Transwitch** - Complete station control unit, transistorized ..... W7AXJ 33
- **Environmental Testing** - Be nice to surplus gear, it has been through a lot ..... W2WYM 36
- **Band Edge Marker** - A 3.5 MHz crystal calibrates your receiver on all ham bands ..... WA2HZR 37
- **Tell The World** - Ham radio needs publicity, here's how to go about it ..... K5JKX/6 39
- **Zero Shift Keying** - A new idea, presented first in 73. You'll be hearing more about this ..... K5JKX/6 42
- **Cross-Polarized Beam** - A new approach to diversity transmission and reception ..... K6CT 48
- **Crystal Oscillators** - This is the Big Technical article. You'll find interesting ..... Staff 50
- **Propagation Charts** ..... K2IGY 64
- **Why a 73 Page Magazine Is Impossible** - or: further developments of the kW Transistor Transmitter ..... K2PMM 72

## October 1961 (#13)

- **Six Meter Linear Amplifier** - 90 watts AM, 360 watts PEP SSB, 2-1/2 watts drive to pair 7378s ..... W2LPC 6
- **Simple High Stability, VFO** - 5763 osc., 5763 buffer. Colpitts circuit ..... W2RWJ 14
- **73 Tests the Central 200V** - It works ..... Staff 18
- **CQ de 73** - Converting the ARA-26 surplus keyer for ham work. Inexpensive, and lots of fun ..... W2WKM 22
- **Like New Mixer Circuit** - New way to improve sensitivity and stability of your receiver ..... Staff 32
- **Two Meters the Easy Way** - The MRT-90 packset, available surplus, makes a terrific two meter transceiver ..... W2WKM 36
- **Useful Accessory for the Shack** - You can't get along without this wavemeter/field strength meter/monitor ..... W2WXH/6 38
- **Inexpensive Vertical** - Easy to put up, tunes 80-40-15 meters, and works out fine ..... W6NKE 40
- **Dual Diversity Beam** - This, we predict, will be a very popular DX'ing antenna ..... K6CT 42
- **VFO Circuits** - Good and bad features of all known circuits. Our big technical article ..... Staff 46
- **Obtaining That DX License** - Gus divulges his secret tactics which will soon give him a reverse DXCC ..... W4BPD 58
- **Sequential Electronic Switch** - Key VFO and final screens in sequence for clickless spark-free keying ..... KV4CI 62
- **Propagation Charts** - What time to where, on what band probably. For world and U.S. short path ..... K2IGY 64
- **Send-Receive Ground Switch** - Antenna switch for simple ham stations. Also keeps lightning out ..... Pyle 66
- **Maximum Utilization from Variacs** - Very useful devices. They're available surplus if you hunt around. Even new they're worth it ..... W4CAG 72
- **Construction Do's and Don'ts** - Rules of the game. Read please ..... K5JKX/6 76
- **Emcar 6** - Why you should get a Porsche to go with your mobile rig ..... W3JXT 82

## November 1961 (#14)

- **Linear for Sunspot Lows** - Do-it-yourself F2 layer. A kilowatt six meter linear for SSB ..... K6QQN & W6QMN 6
- **Transistor Mike Pre-Amplifier** - Outboard pre-amp to make up for audio deficiencies of your rig ..... K6PZT 10
- **Transistorized RTTY Audio Oscillator** - Printed circuit, generates mark and space tones for RTTY ..... W5SFT 12
- **Have You Met These Characters** - TVI brings out some remarkable characters ..... K3HNP 15
- **TV Tuner Receiver** - The standard coil tuner makes a wonderful basis for a fine inexpensive homemade receiver ..... W0RQF 16
- **Solid Power** - What diodes to use for what voltage power supply ..... K5JKX/6 20
- **Phasing For Audio Selectivity** - Simple gadget makes the 80M Novice band sound almost vacant ..... K5JKX/6 24
- **Quick and Simple Mobile Rig** - CB is good for something! Convert those CB rigs to 6-10-15-20M featured here ..... K5JKX/6 30
- **Single-Sideband Transceiver** - All band, 200 watt PEP. VOX, etc. Everything you could want in a transceiver ..... W6BUV 33
- **A Quad for Six** - The quad works excellently on six meters too, and is awfully easy to build ..... W3TBF/0 48
- **Evolution of Antennas** - Short history of the early ideas in antenna design and how they grew ..... W7OE 50
- **Propagation Charts for November** - What time, to where, when, on what bands... Maybe. Including short-haul inter-U.S. ..... K2IGY 58
- **Two Uses for a Birdie** - 1) Super accurate alignment of IFs. 2) Substitute for xtal standard for bandsetting ..... K5JKX/6 62
- **Horn Antennas** - 1296 MHz requires an entirely different approach to antennas and feedlines ..... T12NA 64
- **Audio Hither & Thither** - Connecting the tape recorder and phone patch into your rig and receiver ..... W3KBM 66
- **Rewinding Relays and Transformers** - Rewinding for different voltages or in case of failure under the smoke test ..... K0RRM 70
- **Surplus Utilization** - General discussion: where to buy, what to buy, and how to best use it after you have it ..... W4WKM 72
- **Testing the Gonset Communicator TV** - Thorough rundown of this popular piece of gear ..... W4API 80

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## December 1961 (#15)

- **Write Your Congressman** - Making a pest out of yourself in a big way ..... K7HDB 6
- **Ten Meter Midget Rig** ..... K5JKX/6 8
- **Versatilizing Meters** ..... W2WYM 12
- **Regenerative Detectors** ..... W5WGF 16
- **Another Two Meter Conversion** - Conversion of the R-77/ARC-3 Receiver provides continuous coverage from 100 to 156 mc, without undue sacrifice of 2 meter bandspread ..... W4WKM 22
- **Economical Custom Construction** - Sturdy, professional appearing custom equipment housing made from readily available materials, using woodworking tools and techniques ..... W4WKM 33
- **Avoid Precise Inaccuracy** ..... K5JKX/6 37
- **Wayout Measurements** - with close at hand equipment or you to can be standard ..... Henry 41
- **On Soldering** ..... K3HNP 43

- **Two Meter Transceiver** ..... WA2INM 45
- **Capacitor Substitution Box** ..... W6AOI 50
- **Antenna** - Simple, inexpensive, small, quick ..... K5JKX/6 52
- **73 Tests the Knight R-55 Receiver** ..... W3UZN 58
- **RTTY in the United Kingdom** ..... G2UK 62
- **Propagation Charts** ..... K2IGY 64
- **73 Reviews the QX-535 Receiver** ..... K3KMO 66

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## 1962

### January 1962 (#16)

- **Kilowatt Sideband Transceiver** - Single band rig, but amazingly compact ..... W6JAT 8
- **Rotate That Tower** - Instead of just the antenna ..... K2LZF 14
- **73 Tests the Alco GDO** - It works fine ..... W4WKM 18
- **Rotors** - Why TV rotors usually fail as beam twirlers ..... K2TKN 20
- **Speakers for Command Sets** - Making use of midget speakers for built-in sound on the ARC-5 receivers ..... W4WKM 24
- **Chase That Dampness** - Cure the number one blight to good radio equipment ..... K4ZGM 28
- **Transistor Analyzer** - Sure cure for unmarked transistors. Also checks out marked ones ..... W6EUM 32
- **Simplified Break-In** - As applied to the Heath Apache ..... W4HBO/2 36
- **Amateur Moonbounce on 1296** - More discussion, not much action yet ..... W6MMU 40
- **Stabilizing Mobile Oscillators** - Zener diodes again. Works ..... W6FIR 46
- **Hanky Box** - BC receiver, 45 watt transmitter and converter combo for the car ..... W3GSC 50
- **Eye-Catching QSLs** - What kind of bum doesn't have any QSL cards? Shame! ..... W2AAA 54
- **Investigating the 2NI69A** - Like to have some fun? Give this a try ..... K6BIJ 57
- **Propagation Charts** - What time to where, when on what bands, maybe. Sunspot chart ..... K2IGY 58
- **QRN** - How to track down noise sources. Explicit ..... WA6IVM 62
- **Save Your Screen Grids** - For class-C amplifiers. No relays involved ..... W9IHT 68
- **Ham TV** - Get on the air for under \$50! This makes you read our new book ..... W0KYQ 72
- **Calibrating the BC-221** - Uncalibrated 221's are a lot cheaper and aren't difficult to calibrate ..... Henry 78
- **A Sensible Attitude** - There is such a thing as too much, even with ham radio. For some people ..... K2ENU 80
- **Pole Pig Picking** - There's a lot of meat in those bones. How to find and choose a pole transformer ..... K2LZF 86

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### February 1962 (#17)

- **V-Loop Beam** - Angie claims this thing works out. Looks easy to build, give it a try ..... W2NQS 8
- **Final Tanks** - It's about time someone did a thorough job on this subject. Technical article ..... W6JAT 12
- **Converting 6 Volt Radios to 12 Volts** - Basic conversion for car radios, Motorola, and link transceivers, etc ..... W4OHM 20
- **RX for the RTTY Bug** - Nice TT converter, complete with scope ..... W0RQF 26
- **A Page from a Designer's Notebook** - Heising modulator design ..... W5SUC 28
- **Sideband the Easy Way** - Using the Wes Schum 10A exciter to drive almost anything you have on hand ..... W9EGQ 30
- **The BC221 as an Accurate Audio Generator** - How to generate precise audio frequencies with the 221 ..... W0OKH 35

- **Which Way is Up?** - Proof positive: we'll print anything ..... K6EAW 36
- **Silicon Rectifiers, Continued** - By the time we through you will be an expert on silicon diodes ..... WA6QFD 38
- **73 Tests the LW-51** - And makes L-W Labs very, very happy ..... W3UZN 42
- **Surplus Frequency Synthesizer** - Incredible surplus buy for people who want to get their feet wet up to here in hamming ..... W4WKM 44
- **Convert the URC-4** - Cute little surplus Handi-Talkie which hits 2M and 220 MHz ..... K7ILP 50
- **Continuity and Power Transformer Checker** - This little test set is really invaluable around the shack ..... W5EHC 52
- **Modifications of the HE-35** - No matter how good a rig is there is always some joker who wants to change it ..... WA2INM 54
- **Dress it Up** - It doesn't take much extra effort to make it look nice. Here's some ideas ..... W4WKM 59
- **PNP-NPN CPO** - We have to print a code practice oscillator now and then, don't we? ..... K6EAW 62
- **32 on 2** - Sneaky way to work two directions at once ..... K8ERV 68
- **Propagation Charts** - When the bands will open to where, probably ..... K2IGY 72
- **Economical Antenna Tower** - 30 foot tilt-over which home-brews for about 0.012 kilobucks ..... 74

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## March 1962 (#18)

- **Printed Circuit VFO** - Extreme stability and simplicity of construction in this 50 MHz VFO may bug you to build ..... W5UB 6
- **Regulated Bias Supply** - Great for linears, develops -20 to -120V @ 0-70 mA and presents only 6 ohms to grid ..... W5IUR 12
- **Check Transistors with an Ohmmeter** - Here is the simplest test for transistors yet, and it's safe and works ..... W9QKC 14
- **Radar Detector** - All you 2,500 MHz SWL's (UNFL's?) will appreciate this mobile receiver ..... W6JAT 18
- **Ham TV Survey** - Ham TV is sprouting up all over. This will bring you up to date on its spread ..... W0KYQ 22
- **Blind Fasteners Aid Construction** - Using explosive rivets to hold things together ..... W4WKM 24
- **Half-Wave Transmission Line** - This gets around a lot of your antenna problems ..... W2KPE 26
- **50 MHz, No Crossmodulation** - Six meter converter designed for high signal density areas ..... K6RNQ 28
- **Page from a Designer's Notebook** - Transistorized carbon mike pre-amps ..... W5SUC 30
- **Brew or Buy?** - Brew ..... W4KOC 32
- **500 Watt Linear Amplifier** - Not 811A's again? Well, er... They're cheap! ..... W0RQF 33
- **The Strings the Thing** - We'll print anything. What a kookie magazine! ..... W7CSD 35
- **Nostalgic V-Beam** - Think piece ..... W2RWJ 37
- **The Tiny Terminator** - 50 ohm 20 watt dummy load built in Canada Dry Cola can. Too bad if this is not your brand ..... K5JKX/6 38
- **Old Vikings Never Die** - Little hints to improve the Viking rigs. Might work on the DX-100 too ..... W4AWM 40
- **73 Tests the Knight T-60 Transmitter** - Here's another rig we can recommend. 80-6 meters, 60 watts, CW-AM ..... W4WKM 42
- **Antenna Protection and Switching Unit** - Built outdoors, where it should be. Keeps lightening out ..... W5EHC 46
- **Is Marconi Like Spaghetti, Daddy?** - Saga of the visiting amateurs, as reported from England ..... Margolis 50
- **Faithful, Long-lasting, Signal Booster** - It also works well and is simple to build ..... W9ZDN 52

- **Evolution of the Bug** - Historical aspects of this oft used, little mustered device ..... W3WRE 54
- **Cure that Angry Band** - Audio's selectivity with the FL-8 surplus audio filter ..... W4THU 57
- **BCI in Your QSO?** - Keeping BC stations out of your receiver ..... K2DHA 58
- **73 Tests the Viking Ranger II** - Johnsen has nicely updated their most popular rig ..... W4API 61
- **High-Level Mixer** - You can mix the full output of your exciter to any band you desire ..... W5EHC 66
- **Zero-Beatnick** - More fun with transistors ..... K6BIJ 64
- **Modulation** - Our big technical article... This will make you an expert ..... Staff 70
- **Propagation Charts** ..... K2IGY 74

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## April 1962 (#19)

- **Six Meter SSB Exciter/Transmitter** - Since sideband is going to be the big thing on 6, you'd better start soldering ..... W5JSN/K8NIC 6
- **Field Strength Meter for Ten and Six** - Using a midget loaded whip to improve the sensitivity of your F.S.M ..... W3YZC 9
- **Forty Meter ZL Special** - As the sunspots go, so go the higher bands. Try this 40M amplifier ..... W4AXE 10
- **73 Tests the Poly-Comm 62B** - Pollytronics has really done it: Six and two in one li'l package ..... W4WKM 12
- **Ham Radio in Finland** - On the spot reporting ..... OH2YV 18
- **Dot Maker** - Great for people who are short on dots ..... W6VAT 20
- **An Accurate S-Meter** - "You're 80 over nine here, OM!" ..... K5JKX/6 22
- **LCU'S Michigan Long Wire** - Interesting 80M antenna. Somebody's always thinking up something new ..... W8LCU 24
- **Station Control Unit** - Contains speaker, transistorized electronic key, break-in circuit, etc ..... W7AXJ 28
- **Universal Antenna** - Works on all bands from 160M to 10M and in between too ..... W6AOI 30
- **One Tube Vox** - Now you, too, can learn to talk steadily to keep the rig on the air ..... K8AOE 37
- **Quartz Crystal Checking** - Wee gadget to check frequency and activity of your quartz chips ..... W0CGA 38
- **Before the Breadboard** - Basics of circuit design, simplified ..... Staff 40
- **Transistorized Cathode Modulator** - Kilowatt transistorized modulator. Let us know if it works ..... K2STV 46
- **AGC for the Swan Transceiver** - A small improvement for this terrific little SSB transceiver ..... K6SHC 51
- **160 Meter Mickey Mouse** - 18 watt for for 160M. Let's get more activity up there. And more frequencies ..... K9PAL 52
- **Improve Weak Signal RTTY Reception** - We may eventually run a new TT converter every month. This one looks good ..... W7CJB 54
- **Pre-Amp Curve Shaping** - Getting a lot more punch out of the crystal mike pre-amp ..... W5SOT 56
- **BC453 Conversion** - Makes a fine and inexpensive signal slicer ..... K6JHJ 58
- **Linear Scope Monitor** - Linears are hard to adjust sometimes, this sure helps ..... W0MWJ 62
- **FM to AM** - Quick conversion for surplus FM gear ..... W4WKM 64
- **The Band Warmer** - Another good idea for use of the KY-65/ARA-26 surplus keyer unit ..... W0RQF 66
- **Propagation Charts** ..... K2IGY 68
- **Precision Measurement for the Amateur** - Hints of getting lab gear and reconditioning it ..... W4WKM 72
- **W2SKE/MM (Mobile Motel)** - Hard learned ideas on fast setting up for travelers ..... W2SKE 78
- **73 Tests the Heathkit IM-10 VTVM** - Nice ..... W3UZN 81

## May 1962 (#20)

- **Two Meter Tank and Coupler** - Part 1 on a marvelous two meter rig ..... W9DUT 6
- **Simple Antenna Mast** - 22 feet for \$4.00 ..... K3LTB/5 8
- **6M Double-Sideband AM Transmitter** - Uses circuit board. Whole bunch of fellows are getting on with this simple rig ..... K8AOE, K8MSB 10
- **Two'er Modifications** - AC/DC power supply, new osc. circuit. Applicable to 10'er & 6'er too ..... K2ORY 16
- **73 Tests the Telco 201 Converter** - This six meter nuvistor converter is amazing ..... WA2INM 18
- **ARC-5 VHF** - Inexpensive surplus rig auto-tunes to 6, 2, and 1-1/4 meters ..... WA2FHC 20
- **73 Tests the Clegg 99'er** - Everybody probably already knows that this rig is great ..... WA2HVK 22
- **7077 Two Meter Converter** - 73 is first again with an application of this new ceramic tube ..... WA6EWV 24
- **Four Layer Devices** - Keeping you abreast of fast moving developments in solid state gadgets ..... K4CPR 30
- **A New Broom** - Sweep generator for aligning filters and stuff ..... K6JHJ 32
- **All Band Linear** - Using four EL-34's (those hi-fi tubes) 300 watts ..... W9CJS 34
- **FSK Without Relays** - Diode keying unit replaces polar relays for the RTTY group ..... W5QJR 38
- **Do Hams Have Fun?** - You'll have fun with this one ..... W4WQT 40
- **Receiver Prices** - Original prices and dates on old receivers. Nostalgia, Inflation! ..... W0HKF 46
- **The 85 B14 Receiver** - This receiver should keep you out of trouble for this month ..... Bernard 50
- **Vacuum Capacitor Traps** - Surplus vacuum condenser units for multi-band traps ..... W4API 60
- **Budget VTVM** - Easy to build gadget. Get out the soldering iron ..... W7INX 62
- **Notes on Silicon Rectifiers** - We'll have to start a silicon rectifier department soon ..... K5IPY 66
- **73 Tests the Heath HA-10 Linear** - Another Heath rig proves out FB ..... K3KMO 68
- **Complete Fire Insurance** - Or, how to keep your transistors out of the garbage ..... W6VAT 70
- **73 Tests the Knight RF Z Bridge and Pocket VOM** - For \$5.85 and \$9.95 you sure don't go wrong ..... WA2INM 74
- **73 Tests the Hallicrafters HT-40K** - New kit from Hallicrafters ..... W3UZN 76
- **Propagation Charts** - What time to where, when, on what band... Probably ..... K2IGY 78
- **RF Q Multiplier** - More fun with the 2N169A ..... K6BIJ 80
- **High Power Antenna Switching Unit** - Using one of the ART-13 antenna switching units to good effect ..... W4WKM 82
- **A Cheap, Simple, Plate Modulator** - The surplus Command Set MD-7 is cheap and works fine ..... WA2PGX 86
- **Keep Your Key from Crawling** - Without bolting it to the table ..... Pyle 89

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## June 1962 (#21)

- **Echo Deluxe** - Two meter transmitter with a commercial appearance ..... W9DUT 6
- **The Friendly Frequency** - 52.525 MHz ..... W9YCB 14
- **Six and Two Meter Nuvistor Pre-Amplifiers** - Pre-amplifiers are easier to build than converters ..... K9ARA 16
- **Milliwatt RF Power Measurements** - For those low power transistor rigs and transceivers ..... K4UWX 18
- **Noise Limiter for the NC-300** - Rate-of-change type limiter ..... W8IQN 20
- **Six Meter Transistor Converter** - Runs directly from your 12 volt system ..... W3HIX 22
- **Simple Tuner for Long Waves** - Explore these long-forgotten frequencies ..... K0VQY 24
- **A kW/SWR Power Meter** - You can leave it in the line if you want ..... W6VAT 26
- **Selectivity Plus** - Putting a mechanical filter in the homebrew receiver ..... W9OFD 30
- **Overload Relay** - Beats fuses all hollow ..... W0OPA 34

**73 Cent Noise Clipper** - A good price. Connects between receiver and headphones ..... K0WML 36

- **Tape Recorder on SSB** - Use tape loops for those long, long CQ's ..... KZ5SW 38
- **Phase Inversion** - Hi-Fi on the hambands? Forsooth! ..... W4JKL 40
- **Electronic Keyer** - Cheap, simple and effective. Get cracking! ..... K3KMO 42
- **Pop Box** - Now you can generate your own ignition interference. Make friends with the neighbors ..... K8ERV 44
- **Selected Circuits** - Looking at the RF Communications Assoc. sideband transceiver ..... W4WKM 46
- **Diathermy** - If it isn't too late you might grab any available units ..... W4WKM 50
- **160 Meter Converter** - Lots doing down on 160, but maybe your receiver doesn't cover the band ..... W1OOP 52
- **Crystal Control for the DSB-100** - For nets, Novices. etc ..... W2BZN 54
- **Break-In CW with the 20-A** - Or any other imitation of the 20-A ..... K2ISP 58
- **73 Tests the Knight Kit Code Practice Oscillator** - Inexpensive and works fine ..... WA2INM 56
- **Seneca Modulation and Keying** - Couple of modifications for Seneca owners ..... WA2GCF 60
- **How is Your Ham Image?** - Martin makes some good points ..... K7NZA 62
- **Calibrate Your Antenna System** - Getting some mileage out of your SWR meter ..... K2DHA 64
- **The Perfect Setup** - Some improvements on overall station setup ..... K0OFB/2 74
- **A Review of the NC-190 and the NC-155** - They're OK ..... Staff 69
- **Propagation Charts** - Goodbye ten meters ..... K2IGY 78
- **A Crystal Diode Noise Generator** - Exceptionally handy for tuning up receivers. Builds in minutes ..... W5TEV 80
- **Receivership** - Ray has had his problems ..... W2TAM 82
- **Values, Etc.** - Some basic discussion on parts values. Read ..... K5JKX 86

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## July 1962 (#22)

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- **VHF with RDR** - Navy surplus conversion. Covers 220 MHz band rather well ..... W2VCG, W2TAM 8
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- **CW Man's Monitor** - One 6C4 and a simple circuit ..... W6EUM 56
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- **Panel Markings** - Professionalizing homebrew gear ..... K5JKX 62
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- **Twin-Cavity Two Meter Filter** - It's what's up front that counts. A thinking man's filter ..... W3TUZ 18
- **Treasures From the Junk Yard** - Car radios can be easily converted to 110 VAC ..... W5VOH 22
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- **How's My What?** - Ken has a good answer for our June article on "How's Your Ham Image?" ..... W7IDF 28
- **Western Ham** - Sense of humor test. 10 points if tears come to your eyes ..... Rodgers 32
- **Improved Grounded Grid Operation** - How to make your exciter load into the final about the same as into an antenna ..... W6JAT 34
- **Rate-of-Change Limiter Revisited** - Using crystal diodes in the noise limiter from the April 1961 issue of 73 ..... K5JKX 36
- **Quad Mode Monitor** - Part 2. All band supermagnificent home built receiver ..... W9DUT 42
- **73 Tests the Waters Universal Hybrid Coupler** - A very compelling article. You'll probably be coupling after you read this ..... K2CM 54
- **Propagation Charts** - W6AM complained that we left these out last month. Bet you never noticed ..... K2IGY 60
- **Full Break-In Keying** - You can get along without it, but there is nothing like it ..... W4MLE 64
- **The Frequency Response Argument** - It's what's on top that counts. Keep the highs high ..... W5SUC 68
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- **50 Watts on 50 MHz in 50 Seconds** - Starting with the Heath DX-20 ..... K9STH 10
- **20 Meter SSB Exciter** - Completely transistorized to boot ..... W5FRC 12
- **Four Layer Semi-conductors** - Self completing automatic bug and other adventures of these new gadgets ..... K8AOE 16
- **Improved Base Clipper** - Eliminates all signals below a given adjustable amplitude ..... Ives 20
- **This May be the Cause of Your Chirp** - If you've been chirpy lately ..... K7MSL 22
- **73 Tries the Irving Preverter** - Two and six meter pre-amplifier. Boyoboyoboy! ..... Staff 24
- **Tone Modulated Crystal Standard** - Standardizes you up to 225 MHz and you don't need a BFO either ..... W9DUT 26
- **Transmitter Design** - Big technical article for the month. Passably interesting or better ..... K5JKX 30
- **Are You Being Lied To, OM?** - SWR bridges can be big liars ..... KZ5SW 42
- **How to Scrounge a Deluxe Junkbox** - Without having to work for a parts distributor ..... K9AAI 44
- **The Local Net** - 29,560 kHz. Many other groups are using 52.525 MHz FM, etc ..... W4MLE 50
- **Modernizing the VF-1** - Stabilizing this fleet-footed sprinter ..... W2RHD 54
- **Mobile Whip** - Har! ..... Rodgers 60
- **Control Circuit for RTTY** - Why use ten switches when one will do? Laziness, that's why ..... W0PHY 62
- **Sirnplescope, Part 2** - Part 1 was back in September 1961. Great gadget ..... K8AOE 63
- **V-Beam** - They stand up to the gales remarkably well ..... G3BID 64
- **Metallic Rectifier Circuitry** - Sort of a supplement to our article on power supplies in July '61 ..... K9MYZ 66
- **Imagination** - A call for the trial of new ideas ..... W4API 70
- **On the Use of the Amateur Bands** - Someone is always proposing a new division of the bands ..... KZ5SW 72
- **The AN/ARC-2** - Stop writing in for this conversion, here it is ..... W4WKM 82
- **FM Rejecting Stub** - In case you don't like FM birdies in your receiver ..... W8HOA 90
- **Converting the BC-652** - Inexpensive 2-6 MHz surplus receiver ..... W1MEG 92

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- **Solid State 1296 MHz Converter** - Transistors on 1296? Good grief, what next? Sensitive too! ..... W3HIX 6
- **Deluxe Your Transceiver** - The Lafayette HE-35A, for example. S-meter, spotting switch, etc ..... K6UGT 10
- **Junction Cheks** - Quick way of making sure the junctions are still good onyour transistors ..... K2OPI 16
- **The Continental Six** - Six meters SSB with this low-cost high performance transmitting converter ..... W1PYM 18
- **Build Your Own Mobile Mike** - Transistorized mic pre-amplifier for more mobile punch ..... K5JKX 20
- **73 Tests the Gonset 220 MHz Communicator** - Commercial equipment comes to the 220 MHz band! ..... W4API 24
- **In Defense of the Operator** - A weak defense is better than no defense at all ..... W0OBF/2 26
- **Catch All - Ha, ha** ..... Rodgers 28
- **Of RTTY and Filters** - Book length feature ..... W3TUZ 32

**Premium Tube Replacement Guide** - Equating all those four numbered tubes to better known tube numbers ..... W4WKM 46

- **73 Tests the Lafayette Starflite** - Inexpensive all-band rig. Eighty dollars, ninety watts ..... W1MEL 50
- **Complicating the Simplescope** - Modifications and improvements of the Sept. 1961 article ..... WOOPA 52
- **73 Tests the Heath IM-30** - Transistor analyzer kit for \$54.88 really does a good job ..... W5SJN 58
- **Simple Squelch** - Squelching that communications receiver used with a VHF converter ..... K4UWX 60
- **Good Old Charlie Queen** - Can this be fiction? ..... W1QUE 64
- **Spotting Simplified** - Getting those "spot" switches to really do the whole job ..... W4MLE 66
- **Coax vs. Open Line** - Coax doesn't fare so well, we'll warn you ..... W9HOV 67
- **Inverted Vee-Beam** - Works out like a bandit. Replace guy wires with a very effective antenna ..... W8DLU 70
- **Choke Evaluator** - Test equipment for the shack, not the car ..... Ives 72
- **Those Different Diodes** - Big technical article. Rouser ..... Staff 80
- **A Good Five Cent QSO** - George fights a losing battle with the lids ..... W4MLE 90

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## December 1962 (#27)

- **Two Meter VFO** - Very stable and uses one tube. Dandy bandspread ..... W6TKA 6
- **Modifying the Sixer** - For a 50% power increase ..... K4ZQQ 9
- **Modifying the HE-45** - Improving the modulation & power output meter for this nice rig ..... WA2INM 10
- **The Irving Hiverter 50** - Six meter SSB converter tested at HQ by W1MEL. Works ..... Staff 12
- **Alternators** - With mobile SSB coming at us in a rush we will be needing these ..... K8ERV 16
- **432 MHz Antenna Tuner** - Pictorial article ..... W1TQZ 18
- **Auto Analyzer** - Not very hammy. Tachometer, dwell angle meter, battery VM, temp. indicator ..... Henry 20
- **Coaxial Baluns** - Open wire is the lowest loss, but how do we get from coax to open line? ..... WA2INM 26
- **Selectivity Plus** - The CW man sometimes goes to great lengths for selectivity ..... W6EUM 28
- **The Heath HR-20** - 73 tests the Heath mobile receiver ..... W4WKM 36
- **AM Oscilloscope Patterns** - You've been wondering what your scope was trying to tell you? ..... WOOPA 44
- **Briefcase Twins** - Complete portable CW station ..... W2TBZ 50
- **The Heath Warrior** - Full kilowatt linear amplifier by Heath ..... W6EUM 60
- **Joe's Other World** - Fiction ..... Margolis 66
- **Transistorized Squelch** - Squelch is very handy and this circuit is so simple you have no excuse ..... W1TUW 74
- **The Waters Q-Notch Filter** - For the KWM and 758 Collins owners that want something better ..... K2CM 74
- **The R-45/ARR-7** - This is practically a SX-28. Surplus conversion ..... W5UOZ 86
- **Constant Voltage Power Supply** - A real gem is available in some of those old TV sets ..... W4WKM 92

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- **Nu 1-1/4 Meter Converter** - Three 6CW4 nuvistors in a sensitive 220 MHz converter .....

- **RF Controlled Break-In** - Automatic send-receive controlled by the key ..... W8MQW 8
- **NTSC Signal for Ham TV** - Ham-TV'ers will want to read this one ..... K2HQY 10
- **73 Tests the WRL Tech-ceiver** - Works fine. Six meter transceiver ..... Staff 18
- **Linear Amplifier** - 3-1000Z kilowatt ..... W6JAT 20
- **73 Reviews the PMR-8** - Fine little mobile receiver by Elmac ..... W6FNG 26
- **Transistorized Audio Frequency Meter** - No test bench is complete with a good audio freq meter, is it? ..... W1TUW 28
- **Tale of a Dark Night** - Introduction to the author ..... W3MFA 30
- **SSB or AM** - Solution: run both ..... G3BID 32
- **Transistorized Mike Adaptor** - Pep up weak surplus mikes with this one ..... W4WKM 34
- **Six Band Ground Plane** - James claims that it works out just fine ..... W6WAW 36
- **75 Meter Transverter** - Good mobile band, simple rig and converter for car radio ..... WA6FPG 40
- **73 Reviews the Knight-Kit T-150** - 80-6M, 150 watts, CW-phone, out of Allied in Chicago ..... K9PWT 48
- **Scopes** - Technical article for this issue. Read please ..... Staff 52
- **The Heath Cantenna** - 73 gets out the can opener ..... W3UZN 62

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- **432 MHz Gallon** - Legal now ..... K2TKN 14
- **Mountain Topping for Blood** - An old pro doesn't answer ones ..... K1CLL 20
- **Simplified 8JK Beams** - The twin-three really puts out a signal. Really ..... W6WAW 24
- **Double Sideband** - DSB has some decided advantages, you might as well read this and face it ..... W3PHL 28
- **Crystal Oscillator** - How to get the stability required for moonbounce on 1296. It ain't easy ..... K2TKN 27
- **Stutterless VOX** - Help-p-p-ps to p-p-p-rev-v-vent sp-p-p-peach imp-p-p-pediments ..... W0OPA 37
- **Ballast for the NC-300** - Dang things are always blowing out. Transistorized replacement ..... K6GVB 38
- **Modules** - Pep talk on ham modulizing ..... W5WGF 40
- **The RK-715B** - Great little inexpensive surplus tube bargain ..... K6BIJ 44
- **The DX-40 with the SB-10** - Sideband for peanuts ..... K0PGA 50
- **How to Build a Junkbox** - Take one pile of junk, some boards, nails ..... Eslick 54
- **Mobile Alternators** - Converting six volt units to 12 volts, plus general discussion ..... W5VOH 56
- **73 Tests the Johnson Messengers** - Boy, are they fun! ..... Staff 60
- **Station Time Panel** - When a ham builds a clock, he really builds a clock ..... Ives 62
- **Remote Antenna Tuning Unit** - Particularly valuable for mobile applications ..... W8HOA 68
- **Recipe for Cooked Ham** - ZZZzzzzaaaaap! ..... W6NKE 70
- **Cartoon** - Ha ha, I hope. Or did your sense of humor get shot off in the War? ..... Rogers 72
- **A Hidden Lab** - Or how to get along with a fussy wife ..... W3BNS 74
- **Like New RAX** - Surplus gem ..... W7IDF 84
- **Precision Frequency Standard** - Another surplus gem. A real gem too. Great ..... W4WKM 88

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## March 1963 (#30)

- **Two Meter Pre-Amp** - Two nuvistors, built by a perfectionist ..... W9DUT 8
- **Portable Ragchewer** - Low-power rig and small receiver. Eminently portable ..... K6LJY 14
- **Infinite Impedance Match** - New type of matching system for beams. Looks good ..... W6NAT 20
- **QRP Transmitter** - 1S4 peanut whistle ..... W1MEL 22

- **Let's Regulate** - Voltage regulated power supplies for transistor circuits and filaments ..... W2RWJ 24
- **Amateur TV Transmitter** - 432 MHz rig with 832A in final ..... W0RQF 28
- **A Six and Two Portable** - Complete bandswitching transceiver ..... K8KDX/6 32
- **Mode Switch for the Eico 720 and 730** - Phone-CW switching system for this popular combination ..... W0DSU 38
- **Nuvistor RF Pre-Amp** - Brings up signals on all of the less expensive receivers ..... W6SFM 40
- **Receiver Buying Guide** - Pictures, prices, and basic data on all postwar receivers ..... W4WKM 44
- **Measure L & C** - Using an audio signal generator ..... K6AI 60
- **Surplus Crystal Calibrator** - Real good deal. 500 kHz ..... W4WKM 66
- **Plug-In Cans in Amateur Construction** - Those surplus cans can be used for a lot of handy building ..... W4WKM 68
- **CW Sidetone Oscillator for SSB Rigs** - Most of 'em have no provision for this important function ..... K6CYG 82
- **The Eico 723** - \$49.95 60 watt rig. Does a fine job ..... W3UZN 84
- **The New Look in Surplus** - A lot of new stuff is hitting the surplus market ..... W4WKM 90

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- **Adjustable Regulated Power Supply** - Playing around with transistors? Then have: one of these ..... W1ISI 8
- **Diode Noise Generator** - Simple test instrument to tune up converters, receivers and stuff ..... Thomas 15
- **Selected Circuits** - Polar relay test set great for the RTTY group ..... W4WKM 18
- **Decibels** - What they are, how to use 'em, complete with a monograph ..... K1MRK 21
- **Vector VFO** - Simple, stable oscillator for 80 meters. Great for DX-60 and the like ..... W7IDF 24
- **Wee Birdcage** - Restricted space antennas are always of interest ..... K3LNZ 26
- **Protect Your Investment** - How to modify your gear without disastering the resale value ..... W4WKM 30
- **A Survey of Mobile Transceivers** - There are quite a few ..... Staff 32
- **Cartoon** - Ha! ..... Rodgers 49
- **Dress Up Home Made Gear** - It doesn't really have to look like you made it in the cellar ..... WOOPA 50
- **Find the Common Ground** - Some suggestions which may improve the interest of your contacts ..... K4ZQR 52
- **Controlled Carrier Screen Modulation** - Putting it into perspective ..... K3LNZ 54
- **Compact VFO Dial** - Using turn counting dials for multi-turn coils, PTOs, etc ..... W4WKM 56
- **Making Etched Circuit Boards** - Full instructions for a not very hard process ..... W1ISI 58
- **Oversight** - Simple addition of a choke which keeps DC off your antenna and you off the floor ..... WA2HYS 62
- **All About Sideband** - Well, almost all, anyway ..... Staff 66
- **Junk Box Station** - Shows how easy it really is to build up a station out of stuff ..... W4MLE 70
- **The NCX-3** - 73 test report ..... W2NSD 78
- **Solving the Bird Problem** - Plaintive plea for cleaner signals ..... W5HJV 80
- **How Low Can You Go?** - Tuning from 10 to 500 kHz ..... K4ZGM 82
- **High-Efficiency Switching** - For that custom final ..... W4WKM 88
- **The SW-240** - 73 test report ..... W2NSD 90
- **Stimulus in the Space Age** - Amateur telemetry balloons and all that, ya ..... W1WQH 92
- **Waters Switches** - For antenna switching, etc. Coax switches ..... K2CM 98
- **Inexpensive Coax Connector - Adaptor System** - Inexpensive and flexible way of piping small amounts of VHF around ..... W4WKM 102
- **Plot your Skip Zones** - Do-it-yourself propagation system ..... W9QKC 104
- **One Ham in a Million!** - Well, one in 350,000 anyway. Story about 5X2JKO in Nigeria .....

K9AMD 106

- **What is a Ham?** - Permission granted to reprint this in non-ham magazines, etc ..... K7GPZ 108
- **The Heath HX-30** - Test report submitted by 73 reader on Heath six meter SSB transmitter ..... W3WTO 112

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## May 1963 (#32)

- **Six Meter Transceiver** - Cute little five transistor hand-held unit. Parts kit available ..... K3NHI 8
- **6DJ8/ECC88 Converter** - Six meters down to 14 MHz using really hot front-end tube ..... WA2HVK 11
- **Simple T-R Switch** - For the CW man who wants full break-in without TVI ..... W4MLE 12
- **All-Band Linear Kilowatt** - Using the new Amperex 8179 you've been reading-about ..... W2LPC 16
- **Reducing Receiver Noise** - Read this one, it is really important... No kidding ..... Gabus 24
- **The Mark IV** - Nice six meter rig, 6146 final ..... K2HQY 30
- **Multi-Channel Pre-Amp** - Feed several rigs from one mic and preamp ..... W9CWG 38
- **A Challenge to the Antenna Experimenter** Quads: tri-band, five-band, two-three-four element, etc ..... W4AZK 42
- **Panoramic Spectrum Analyzer** - Build your own ..... W0BMW 52
- **Shielding the Breadboard** - Some ideas on neat breadboarding ..... W1ISI 58
- **Coax Folded Dipole** - Broad bands things ..... W3HJR 62
- **Getting into Electronics** - It's a good business too ..... W6JAT 66
- **Selected Circuits** - Altec Lansing modular transistorized audio components ..... W4WKM 71
- **Diode Modulators** - Big technical article ..... Staff 74
- **73 Tests the Knight-Kit P2** - A new SWR meter kit ..... K6UGT 80

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## June 1963 (#33)

- **Instant 220** - The AN/DMQ-2 is a snap to put on 220 ..... W2TQS 8
- **More Selectivity for the RT-91/ARC-2** - Great transceiver, covers 40-80 ..... W6BJI 11
- **PE-97A? What's That?** - 12V in, 250V @ 100 mA out. Just right for Two'er, etc ..... W4DWU 14
- **Bandspreading the BC-348** - Curing one of the few drawbacks of this great surplus receiver ..... W5EUL 18
- **Lazy Man's Coil Evaluator** - Nice little piece of test gear you'll want to build. 73 kit ..... W0QWY 20
- **Converting the BC-230 & BC-430** - Inexpensive surplus rig which can easily cover 160-10M ..... W5EHC 24
- **Ecdysiasm** - RT45/ARQ-1 demonstrates stripping for fun and profit ..... W4WKM 30
- **A Beginner's Receiver** - BC-453 plus converter, product detector, etc ..... K6JHJ 32
- **Power Tuning** - Motorizing receivers with surplus drive units ..... Ives 40
- **Beam Rotor** - Putting one of those surplus motors to work ..... K1SDR 43
- **CW Monitor** - One transistor ten minute construction job. 73 kit, naturally ..... WA2WFW 44
- **Antenna Relay Unit** - Uses BC-442 unit from ARC-5 ..... W4WKM 46
- **Function of the Loading Coil** - In mobile antennas ..... W9GCQ 52
- **Propagation Charts** - What bands to where, when... Maybe ..... Nelson 54
- **More Selectivity for the Two'er** - Nice rig, but you have to admit that it could use some selectivity ..... K6CJN 56
- **The ART-26 TV Transmitter** - Don't forget to subscribe to the ATV Bulletin, \$1 per six issues ..... K6MIO 58
- **Special Surplus Section** - Thirty-three solid pages of surplus bargains. Have fun ..... W2NSD 65
- **A Bargain Receiver for 220** - The R-48/TRC-8. Easy conversion ..... K3IUV 100
- **Three for the ARC** - You didn't think we'd pass up some ARC-5 conversions, did you? .....

W7ATK 102

◦ The ARC-5's - Did you? ..... W4WKM 104

◦ Still Another 2 Meter Conversion - ARC-3 transmitter ..... W4WKM 106

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## July 1963 (#34)

- **Sizzling Six** - Super sensitive six meter converter. Kit available ..... W9DUT 8
- **Chemical City TU** - One of the best RTTY converters to come along so far ..... K8IQJ 14
- **Low-Ebb in the Sunspot Cycle** - "Humph, that's science fiction" said Tom astoundingly ..... K2TKN 17
- **Two-Banding the Swan One Bander** - Cinch ..... W8DZH 18
- **Six Meter Transmitter** - 2E26 output. Kit available on terrific tuning-indicator ..... K6GKU 22
- **Two Meter Antenna Coupler and SWR Bridge** - Very important item for VHF'ers ..... W6TKA 32
- **Field Day** - Eimac hams get out for this annual event ..... W6JAT 28
- **Replacement Power Transformer** - What to do when caught without a replacement ..... W5PPE 36
- **The Visitor** - Parable ..... W2CRR 38
- **Paco GDO** - A good little dipper you may have overlooked ..... W5SUC 46
- **The Cubical Quad** - How they work ..... W4YM 48
- **Two-Band VHF Quad** - Six and two meters ..... W6SFM 50
- **Putting a Quad Up** - With a minimum of money and manpower ..... K2AAC 58
- **Three-Band Three-Element Quad** - Now that you know how great quads are, here's how to make one ..... W9AIW 62
- **Propagation** - What time to where, maybe ..... Nelson 65
- **Active SSB Modulators** - Big technical article. Guaranteed understandable ..... Staff 66
- **New Look in RF Ammeters** - Do-it-yourselfing ammeters ..... W4WKM 72
- **Knight-Kit R-100A** - Checking out this inexpensive receiver ..... W6EUM 76
- **Heath Monitor Scope** - Long needed product. Works ..... W4WKM 78

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## August 1963 (#35)

- **Dry Cell Rigs** - QRP mountaintop special for six meters ..... K1CLL 8
- **Diode Noise Generator** - 73 kit. Zener diode voltage regulated job ..... K9ONT 15
- **Video Modulation** - For the ham-TV contingent ..... W8VCO 16
- **Magic T-R** - Best Tee-R yet for VHF with no loss of sensitivity ..... K5JKX 20
- **Saturn 6** - Soup up your halo with this tuning method ..... K5LPE 22
- **Utopia Break-In** - Hear through your own sending and keep track of the frequency ..... W4MLE 24
- **Practical Vee-Beam** - This is like a small V-beam handbook sort of thing ..... K1MRK 30
- **Coax Cable Losses** - Or why serious VHF men use open wire line ..... K5JKX 36
- **The ON5-PA9 Operation** - Details on the Verviers Rally ..... G3BID 38
- **RF Wattmeter** - Cardboard mailing tube plus lightmeter... Slick ..... W7CSD 46
- **Transmitting Tubes** - Specifications on all popular transmitting tubes ..... K5JKX 48
- **Propagation** - What time to when, from where, maybe ..... Nelson 52
- **Power Supply** - Tubeless, general purpose ..... W7OE 54
- **Confessions of an Electronic Genius** - How to become one ..... K6UGT 58
- **Squelch for the Two'er and Six'er** - Nawthin to it ..... W0TWP 61
- **\$25 Cheap** - Towering up the hard way ..... W1MEL 62
- **Add-O-Circuit** - International Crystal rings the bell ..... W2NSD/1 66
- **SWR Meter** - More info on using this baffling test equipment ..... W8JWP 68
- **Vertical Antennas** - Theory and practice. Learn ..... W9EGQ 70
- **Further on the Windom** - Darned good all-band antennax ..... W3AFM 76

## September 1963 (#36)

- **Cast Iron Balun** - Using ferrite core inductors. 73 parts kit available ..... W4WKM 8
- **CW Noise Limiter** - Or have you noticed that your noise limiter turns off on CW? ..... W6SFM 10
- **Errorless RTTY Converter** - Well, almost errorless ..... K5JKX 12
- **Bourbon S-Meter** - As contrasted with the more popular Scotch S-Meters. Parts kit on this ..... W6TKA 18
- **Cartoon** - Har de har ..... Rodgers 20
- **Towers** - Compendium ..... K1APA 22
- **VHF Receiver** - Module type construction, tuner for VHF converters ..... W0RQF 26
- **Heliwhip Tuning** - It is kind of foolish not to have your mobile whip tuned ..... W2IAZ 34
- **Propagation** - What time to where, maybe ..... Nelson 38
- **UHF Cavity Design** - Maybe you aren't on 6M or up, but you can learn something anyway ..... K5JKX 40
- **Dual Antenna System for Mobile** - For multiband operation. The XYL will have a fit ..... W2IAZ 48
- **73 Tests and HX-20** - Mobile sideband for us paupers. Works fine ..... K6KGS 52
- **Variable Inducer** - Remote controlled antenna tuning ..... WB2CQM 56
- **AM Quiz** - Maybe you need to sit down and read some of our technical articles ..... W5EHC 60
- **Rotten CW** - Right ..... W1GQJ 62
- **Monitor Scope** - If you haven't bought one, you'd better build one. This's easy ..... W5JSN 66
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- **Code Master** - Take one phonograph, add ingenuity ..... K6OKX 76
- **Save that Mil** - Efficiency pointers for mobile work ..... K1JWU 75

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- **Why Johnny Ham Can't Hear** - (with apologies to Rudolph Flesch) ..... W6VAT 12
- **Why Fight Ohm's Law?** ..... K5HPT 16
- **Tri-Element Remotely Tuned Yagi** ..... WB2CQM 22
- **Rules of Thumb** - Or How to Get in the Ballpark and Stay ..... W5IUR 28
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- **The Minute Motor** ..... W3WPV 36
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- **The Portable HE-35** ..... W3IKH 50
- **Buyer's Guide** ..... Staff 56
- **Product Detector** ..... K5JKX 76
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- **A Novel Type High-Capacitance VFO** ..... YU1FR 86
- **Radio Astronomy** ..... WA2BWQ 92
- **The Big Switch** ..... W4STX 94
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- **SWR/PWR Meters** ..... W2KPE 28
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- **The Battle of the Century** ..... W2AAA 86
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- **QRP Kilowatt** ..... WA4DQS 8
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- **VHF Contest Special - A dissertation on the use of the Corner Reflector on 144 MHz** ..... K9SGZ 20
- **The VR Tube** ..... Lyman 24
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- **How Good is Your Receiver** ..... WA4EPY 55
- **Effective Filtering - Or shut that thing off!** ..... W2OZY 58
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- **Europe on \$2000 a Day** ..... W2NSD/1 64
- **Heath HW-22** - 40 meter SSB transceiver ..... WA2TDH 74
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- **More on the Magic TR Switch** ..... K5JKX 23
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- **Loud Speakers and Enclosures** - for phone ..... W1JKX 28
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- **Biasing Tubes** ..... W2BDG 20
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- **1296 MHz RF Pre-Amp** ..... I1LOV 14
- **Our Man in Washington** ..... W2DUD 18
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- **What Every Amateur Should Know** ..... W2DUD 72
- **The Vertical J** - a simple, inexpensive six meter antenna ..... K5JKX 82
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- **Class D Amplifier** - introducing a new type of audio circuit for transistors ..... K5JKX 26
- **12 Volts from 6** ..... K6BIJ 32
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- **The 432'er: Local Oscillator Chain .....** K1CLL 16
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- **Linear for the Sixer** ..... K1CLL 11
- **Portable Six Meter Station** ..... W1OOP 16
- **Now That You Ask Me** ..... W7IDF 29
- **More on the 6DQ5** ..... K5JKX 32
- **SJS Receiver** ..... K5JKX 34
- **Another Antenna of Note** ..... W2RWJ 40
- **Tuned Line Tank Circuits** ..... WA4EPY 42
- **Six the Easy Way** ..... WA9CZQ 50
- **Simple Squelch** ..... K5JKX 53
- **Souping the TCS** ..... K7CJJ 54
- **Varicap Phase Modulator** ..... W7CSD 56
- **Friendly Silicon Rectifiers** ..... W2RWJ 58
- **Moonbounce in Switzerland** ..... HB9RF 62
- **The Heath SB-400** ..... K1RPB 64
- **Save Ten?** ..... WA4HWH 66
- **SB-10 and the ARC-2** ..... W6PDD 68
- **RF Hazard** ..... W2QCI 70
- **How to Raise a Beam** ..... W2RWJ 72
- **Power for DC Motors** ..... W4WKM 76
- **Gonset Sidewinder** ..... W2NSD/1 82
- **Rubbish Wire Long Sky** ..... K5HVZ 84
- **Bagpipes and the Phone Men** ..... W1JKZ 87
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- **Compact Full Size 20 Meter Beam** ..... W3PMV 10
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- **The SJS Receiver, Part 2** ..... K5JKX 26
- **The P&H 2-150** ..... K6LOP 30
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- **The 432'er Modulator** ..... K1CLL 44
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- **Ten'er to Six** ..... K6GKU 51
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- **City Life** ..... WA2WYJ 62
- **Crystal Refrigerator** ..... K3HTB 64
- **All About Noise Figure** ..... K5JKX 66
- **APX-6 to 1290 MHz** ..... I1LOV 76
- **IoAR News** ..... WA4PDX 87
- **New Amperex Tubes** ..... WA1CCH 90
- **NCL-2000 Linear** ..... W1ALU 92
- **Propagation Charts** ..... Nelson 96

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- **SSB VFO** ..... K9ALD 10
- **Color the Grommet Gone** ..... K7IDF 12
- **Cartoon** ..... Rogers 14
- **Tuneable Antenna for 432** ..... K1CLL 16
- **On the Air on 432** ..... K1CLL 18
- **Precision Audio Attenuator** ..... K9QYI 22
- **6 Meter VFO Transmitter** ..... WA2GCF 24
- **Sterba Curtain for Two** ..... W2ZBS 30
- **Electrolytic Saver** ..... W0HMK 31
- **KWM-2 Voltage Regulator** ..... WA4NXC 33
- **80-40 Vertical** ..... WB2CQM 34
- **Transistor AFSK** ..... K9MLD 36
- **2 Meter Mobile** ..... W2CJN 38
- **Mobile Phone Patch** ..... W2LNP 40
- **KWM Operating Notes** ..... WA4NXC 44
- **SJS, Part 3** ..... K5JKX 46
- **UHF Transistor Circuitry** ..... K1CLL 48
- **Mobile Noise Limiter** ..... K0POX 60
- **Amateur Radio Operating, FCC Version** ..... W5EHC 62
- **Designing Phase Shift Network** ..... K5JKX 66
- **The Easy Way** ..... K3LNZ 68
- **Failsafe Power Supply Control** ..... W3CJM 70
- **Incremental Tuning for the NCX-3** ..... K2DXO 72
- **Lawrence Modification Kit** ..... K1TVD 74
- **IoAR: The Amateur Radio Position** ..... W2DUD 76
- **SB-33 and MP-10** ..... W6VAX 79
- **Amplidyne 621** ..... K0CER 80
- **Return to the Art** ..... K3DSQ 82
- **Heath Applications Series** ..... K8AJD 84
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- **Propagation** ..... Nelson 96

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- **SSB Mobile Receiver** - Lots of nice ideas in this one ..... W3ZFJ 6
- **Cheap Pair of Socks** - Simple linear using inexpensive new tube ..... W6NKZ 10
- **28 Volt Supply** - 10 amps at 28 volts for \$10 ..... K6VNT 12

- **Weather Detector** - Don't let a tornado suck you up ..... K5JKX 14
- **14 Elements on 432** - Simple yagi for 70 cm ..... K1CLL 16
- **Miniature Multiband Tuner** - Very clever and useful ..... W6SFM 18
- **Bamboo Birdcage** - Thanks to G4ZU and the boomless Quad ..... W6WAW 22
- **Going RTTY - Part 2** - Part 1 was in January ..... W4RWM 24
- **Sixer to the N'th** - Some small changes for operating convenience ..... K1GHO 26
- **Two'er Talk** - These simple changes improve performance significantly ..... W8HHS 28
- **High-Level Modulation for Ham TV** - Series modulator for improved results ..... W7CSD 30
- **That Elusive SWR** - Why throw away those watts? By our Paramp author ..... WA6BSO 32
- **Short Folded Dipoles** - How about a 33 foot antenna for 80 meters? ..... W6WAW 34
- **VFO Construction Techniques** - Solid for stability. Like the U.S.S. Missouri ..... W4WKM 36
- **Two Meter Double Sideband** - The Phantom rises again ..... W6TKA 40
- **When Good Losers Get Together** - Non-technical. In fact, funny ..... WA5EFL 46
- **Evaluating Receivers** - Just in case you're in the market for a fancy Christmas present ..... K5JKX 52
- **RK 715B on 6 Meters** - Old 5D21's never die; they just turn into quarts of RF ..... K2ZEL 58
- **Testing the Clegg Venus** - In case you wondered: it's tremendous ..... 64
- **SSB With the 6N2** - Curious, huh? ..... K5SGP 68
- **Unit Power Oscillators** - More useful UHF test gear in Bill's inimitable style ..... K1CLL 78
- **Repair That Mike** - Fix up that old mike with an inexpensive new cartridge ..... W4WKM 82
- **Heath Tunnel Dipper** - A very useful piece of gear ..... W3UZN 84
- **The Autotransformer** - For maximum power supply versatility ..... W1ISI 96
- **Bandpass Coupler Design** - Or maybe you like to twiddle knobs ..... K5JKX 102

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- **AM, the Ham and Transistors** - It's not too easy to get linear modulation with transistors ..... Geisler 12
- **Diode Controlled Break-In** - A very clever scheme for easy clean switching ..... VE2AUB/W5 16
- **Calibration and How to Get It** - By one of the greatest hams ..... K6BJ 22
- **Tuned Feeders Forever** - Nasty black snake ..... W5DWT 24
- **Pegboard Panacea** - Clean up your messy workshop ..... K6UGT 27
- **Low-Cost GDO** - For those of you who don't like transistors ..... W7CJB 28
- **Transistor Amplifier Design** - It's not hard at all ..... K5JKX 30
- **Heath Cantenna for UHF** - Bet you didn't know that it's good on 432 ..... K6MIO 34
- **I'd Like to See** - All sorts of clever inventions ..... W2LLZ 36
- **Ham X-Word** - Wear out your brain ..... WA2BWQ 37
- **Conelrad, No; EBS, Yes!** - Simple monitor for your local BC station ..... K3RKX 40
- **Automatic Load Control** - If you're on SSB, you need ALC ..... K5JKX 40
- **Solid-State Noise Clipper** - Simple way to get rid of that racket ..... K6MVH 48
- **Take Full Advantage of Your Halo** - Simple gadget for easier matching ..... WA2DJU 52
- **Is Your Investment Protected?** - Insure your expensive gear ..... K9UTN 56
- **Converting the RDZ Receiver** - From 400 to 60 cycles ..... K1VDX 66
- **So We Bought a Spiralray** - And found a lot of interesting features ..... WA4EPY 6
- **Two'er Linear** - To give you more practical information on inexpensive linear ..... K1CLL 70
- **40 Watt DC-to-DC Converter** - It operates on 6 volts and uses a common transformer ..... W3UWV 76
- **Heath SB-200** - Very nice ..... WA2TDH 78
- **How to Fish for DX** - From a ham who ought to know ..... 5Z4ERR 82
- **Propogation** - Conditions aren't too bad ..... Nelson 92

## February 1965 (#53)

- **The Ham and TVI** - With clever cartoons by K3SUK ..... WA6OQP 6
- **Coffee Can VXO for Oscar III** - Be ready for QSO's to Europe on two ..... W7SMC6, W6HEK 10
- **Transistor, Hi, Hi** - A few interesting notes on Nipponese transistors ..... K6QKL/ KH6 11
- **Multiband Vertical Antenna** - A simple high-frequency antenna for hams with space problems ..... W3UWV 12
- **Let's Go Ham TV** - The details of getting on the air ..... K3DSM 18
- **Solid-State SSB Power Supply** - With same vital information as well as construction details ..... W1VIV 24
- **Handy Dandy Zeners** - An interesting article in spite of the title ..... W0GJB 28
- **Cooling Notes on the 4-1000A** - Keep it cool for long life ..... W6VFR 30
- **120 Watts on Two: Part 2** - The first part of this fine mobile rig was in January ..... K5JKX, W5PPE 32
- **More on That Simple TR Switch** - Published in May 63 ..... W4MLE 38
- **The Disguised Twist** - A V-H beam for 2 ..... WA6LUM 40
- **The Backward-Upside-Down Halo** - Unconventional mounting for improved results ..... WA41NJ 44
- **VHF-UHF Mixers** - Detectors and mixers using helices, strips and semi-cav ..... K1CLL 46
- **UHF Signal Generator** - A generator for 432 and 1296 ..... K6MIO 52
- **Just a Piece of Wire?** - For VHF constructors ..... K5BLF 56
- **The Ham and CD Emergencies** - Are you doing your share of PS? ..... W5CZ 58
- **Brussels International Mobile Rally** - See what fun reciprocal licensing can be? ..... G3BID 62
- **The Callbook Game** - It doesn't take much imagination to extend this one ..... WA2TDH 66
- **Plate Modulation with Controlled Carrier** - Interesting idea from a great 73 booster ..... W5EHC 68
- **Audio Bandpass Filter** - Something for the CW ham ..... Hansen 70
- **Correcting Errors in the "Errorless RTTY Converter"** - Fine title, that ..... K5JKX 72
- **The Swan 350** - A fine new piece of gear ..... WB6KEH 82
- **The Lafayette HE-45B** - For inexpensive 6 meter contacts ..... K3VHK 8
- **The SB-33 on AM** - The title is self explanatory ..... W7L1A 9
- **Caveat Emptor** - Have you sent in your ad this month? ..... Staff 92
- **Propagation** - With some thing new ..... Nelson 96

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## March 1965 (#54)

- **Dual VHF Converter** - Combination 144/220 MHz Nuvistor converter ..... W9DUT 8
- **Two-Band Collinear Antenna** - For 40 and 15 meters, by George ..... W7CSD 10
- **The Parametric-Transistor Multiplier** - A new development in electronics of great interest, no doubt ..... W6GXN, W6QUD 12
- **Improving the Garden City TU** - Don't let the title fool you; it's a complete TU, whatever *that* is ..... W7CJB 16
- **The Ham** - Don't miss this one. It hurts. Illustrated by K3SUK ..... Pirolo 22
- **Oscar III Orbit Computor** - Be ready for the bird to fly ..... W7SMC/6 20
- **Converting the CB-1 to Six Meters** - Don't let those old CB rigs go to waste. Most are ..... WA2INM 26
- **The Big Bang** - A g.g. 813 linear ..... W4BV 28
- **A Better Converter** - Six meters, four transistors, two conversions ..... WA0HQA 32
- **Hints for Microwave** - To inspire you to get to work ..... K7ZFG 34
- **A New Power Tube** - The 8236 in an AM modulator. The tube is good for SSB, too ..... W1KSZ 36

- Hybrid 432 MHz Exciter - Get on 3/4 meters with only two tubes and a varactor ..... W9SEK 38
- 5/8 Wave Vertical for Two - For people who live in backward, vertically polarized areas ..... K4DJG 42
- Printed Circuits-Almost - An effective method of attractive construction ..... W3ITO 44
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- **A 75 Watt Two'er Linear** - It uses Bill's favorite Compactron ..... K1CLL 66
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- **Two Meter Repeater** - Even if you don't need a repeater, this is interesting ..... W5KPZ 58
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- **A Broad-Band 80 Meter Vertical** - 3.5 to 4 MHz with no adjustments ..... VE1TG 26
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- **The National 200** - National's inexpensive new transceiver is attracting much attention ..... W1DTY 104
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- **73 Useful Transistor Circuits** - If you're a builder, you'll like this one. It's a fantastic collection of useful, simple circuits using transistors for all sorts of receiving, transmitting and test equipment ..... W1DTY 65
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- **Digital Basics** - This is no time to be a digital illiterate. Part III reveals the secrets of multivibrators, shift registers, and other notorious devices ..... K4IPV 46
- **The Money-Maker Power Supply** - Need 12 volts for your transceiver? Save half the cost of a commercial unit by assembling this 25-Amp monster ..... WA6TTY 56
- **TVRO Q & A: Part III** - LNAs are expensive, but rolling your own is a losing proposition ..... WB0POP 64
- **The Sound of Silence** - Beep!! Your TS-180 is off the air, Charlie ..... HB9BLU 70
- **Build the Re-Fuser** - It's a self-replacing fuse. Why blow one when you can blow two? ..... K5CN 72
- **No Smoking in the Ham Shack** - Overvoltage kills solid-state finals Protect yours for \$1.00 ..... N7JJ 74
- **Tempo MARSer** - Get the S-1 off those crowded ham channels. Expand your coverage above and below the amateur band ..... WB6IQN 76
- **CW and the Apple II** - The simplicity of BASIC plus the speed of machine language equals a near-perfect Morse keyboard ..... N5MR 84
- **Everyman's Audio Amplifier** - Make this one chip amp a permanent part of your test bench. It's an easy project for beginning experimenters ..... W3KBM 90
- **Award-Winning Program** - Certificate hunters, cut your paperwork down to size. Let your Pet track your quest for excellence ..... WB2GFE 94
- **Speed Demon** - How fast was that? Find out with this wpm display for Heath's 1410 keyer ..... K4ZHM 102
- **Keyer on a Shoestring** - Hams are cheap and so is this keyer. Big spenders will build the deluxe,

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- **The Hangman's 2-Meter Collinear** - Make your tower do double duty. Drop this array from the top and get 6-dB gain ..... W1GV/4 10
- **Deep-Six Squelch Tails** - Kerchunks take a dive with the addition of this audio delay ..... WA2NYE 14
- **Build Yourself A Paralyzed Beam** - Go from east to west In less than a second with this 2-meter array. And put your rotator out to pasture ..... WB2WIK 24
- **Taming the 2-Meter Linear** - It lives In the forest of spurious oscillations and answers to the call of the correct bias. Catch one for yourself ..... VE3LMP 28
- **The Frugal Floppy Bazooka** - This 2-meter antenna coils up into a small package, but it shoots a straight signal ..... N7BGZ 32
- **Taking It Higher** - Raising a repeater's antenna is the way to wider coverage, right? Wrong ..... W4MLE 36
- **Dial-A-Frequency** - Let your fingers do the walking with this remote control. All you need is a spare telephone ..... K1WGN 44
- **Improving God's IDer** - Put more flexibility the K2OAW circuit and save the advantages of the original ..... K9XI 51
- **The Bunesti Caper** - The two British agents needed a power amp-fast. Could the American ham build one? ..... W9PJF 56
- **The Tube Returns** - Move over, ICs This receiver is easy to build cheap, and works like a dream ..... W1BC 64
- **The Program That Knows It All** - Repeater info, third-party agreements, you name it-this TRS-80 BASIC program knows it ..... W8XW 72
- **Berserk Direction-Finding** - Zero In on transmitters in seconds with this TRS-80 program. It will tell you how to get there, too ..... WD8CBE 76
- **Shack from Scratch** - Building a ham shack in a new home can be a breeze. Just plan ahead ..... W2XQ 84
- **Winning the Coax War** - The electrical length of feedline depends on its velocity factor. Don't get caught short ..... W9PJF 90
- **Red-Hot and Ready to Go** - Anyone who has ever soldered knows that the cord gets in the way. Find freedom with this homebrew cordless iron ..... W7RXV 101
- **Cutting Current to Size** - Measuring large ac currents can be difficult unless you know a trick or two. W7CRY explains how ..... W7CRY 108
- **Construct This All-American Audio Signal Generator** - The perfect project for starting a test bench or rounding one out ..... WA2SUT 116
- **Maximum Modulation for CB Conversions** - Many CB rigs lack the gain for full modulation. This preamp will help ..... AJ0P 122

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- **Action Machine for 20** - Are home-brew rigs a lost art? No yet! Here's an SSB transceiver you can build ..... WB5IPM 12
- **An Alarming Procedure** - This false-proof repeater emergency alert won't tie up expensive equipment ..... WA1LCF, K1FNX 24
- **Trimming the Fat from ATV** - Why use 3 MHz when 500 kHz will do? WB6FHD proposes a way ..... WB6FHD 32

- **The Forgetful Autodialer Puzzle** - Even Sherlock couldn't figure out how to make an autodialer that reprograms with no hardware changes Elementary, says dear Babe ..... W7BBX 40
- **My Own Silver Mine** - For W1FLP, reclaiming silver from photographic fixer is cheap, easy and profitable. King Midas should have had it so good ..... W1FLP 46
- **Fun-Equipment Revisited** - Here are higher-band versions of the ever popular Fun-Mlitter and Fun-Amp. They are based on the Fun-Philosophy: cheap and simple ..... WA0RBR 48
- **The Ultimate Breadboard** - There used to be two styles of prototypes- rat's nest and cramped. Now there is a third style -simple ..... N6BW 52
- **Beating the Untraceable Buzz** - Man-made Interference doesn't have to destroy reception. Not when you use W1GV's buzz-beating antennas ..... W1GV/4 56
- **The Care and Feeding of Optoelectronics** - There are many ways to make these devices earn their keep Here is one ..... K3VDB 62
- **International Success Story: The BBC** - From its battery of transmitters, the BBC fires a dally salvo of news and entertainment around the world. No commercials, either ..... Peterson 68
- **Active-Filter Design Made Easy** - Using this BASIC program, if you don't like the design, then scrap it. All you lose is a few seconds ..... WD4HPC 78
- **The Cornerstone of Equipment Failure: Heat Damage** - The proper heat sink will preserve transistors. Learn how to keep your circuitry from resembling a core meltdown ..... Shamburger 84
- **Your January Home-Brew Project** - No frills-just a solid \$10 SSB exciter for HF Who says hams don't build anymore ..... VE7DOD 92
- **King of the Pulse Generators** - One-shot or a train, TTL or CMOS, this generator will fit the bill. It's just what your test bench always wanted ..... WA3RJS 10

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- **Unleash the TS-900** - A rig like this deserves more room than 2meters can give. Get on HF (including WARC bands) with this transverter ..... W4BF 10
- **Four-Tone Audio Oscillator: A Potent Troubleshooter** - For any test that requires a tone, this oscillator does the job It can also be computer-controlled ..... W7BBX 20
- **Superman's Repeater Control System** - This simple system offers four independent on/off outputs. Just duck into any phone booth to use it ..... K3IJ 32
- **Up and Coming: Direct-Broadcast Satellites** - The only thing not up in the air in this business is the satellites, so this budding technology is not just pie in the sky ..... N8RK 38
- **Work the Russian Robot Ops** - The robots aboard Russia's two new satellites are cantankerous and challenging. Here are some tips on how to work them ..... K4TWJ 44
- **Ham Radio Hits the '82 World's Fair** - When the gates In Knoxville opened, would WA4KFS be ready? Here's the inside story of the World's Fair station ..... N4AQI 50
- **Beef Up Your CB-to-CW Conversion** - A good bfo will bring your receiver performance up to par. This one is easy to add on ..... W1BG 56
- **The Denali Connection** - Disaster struck these two hams in the back-country of Alaska. Only a tenuous radio link to civilization could save them ..... KL7RD 60
- **Error Protection for Your Digital Transmissions** - Block coding can make your signal 100% error free ..... W9JD/2 64
- **Drive-Time SWLing** - This simple car radio converter will open up a whole new world of driving ..... AG9C 70
- **Stop That Heist!** - What would you say about an alarm that's portable, inexpensive, and goes off when a thief just touches the doorknob? We say build it ..... WD5JWY 72
- **Get the DX Edge!** - There are ways to stand out in the pileups for Spanish-speaking stations. One is to speak their language ..... KB9SP 76
- **Power-Line Protection: The Weak Link** - Solid-state equipment may be extremely reliable, but just microseconds of overvoltage can change that ..... N8ADA 83
- **Higher Voltage, Less Weight** - A voltage quadrupler that weighs ounces? You bet-and cheap surplus capacitors make it possible ..... W7CSD 84

- **Make Room for More Age** - Automatic gain control is useful In many applications. With this simple circuit, you'll never have to be without it ..... N7APE 86
- **You Can Troubleshoot Mobile Noise** - K5CA tells what to do when a signal IS 5-7 and the noise is 5-9 ..... K5CA 88
- **Electronics vs. Creepy Crawlers** - Build this ultrasonic oscillator and drive pests crazy. Your pet hamster, too ..... K7YZZ 90
- **Slimming and Trimming the R-1000** - In crowded conditions the 6-kHz filter may not cut the QRM. Here's the way out ..... 5Z4CL/K5PAW 92
- **Add a Touch of Class to CB Conversions** - Converting a Hy-Gain board to 10 meters is only half the story Try addling a digital readout and scanning capability ..... N2DS 94

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- **RTTY Tuning: The New Solution** - This simple tuning indicator whipped the competition and took first place in 73's Home-Brew II Contest ..... WB2OSZ 10
- **Uncover Equipment for OSCAR Phase III** - lurking in flea markets and junk boxes is everything you need to work OSCAR. K6KLY tells what to look for and how to make it work ..... K6KLY 18
- **Up and Coming: Direct-Broadcast Satellites** - Part II looks at the technical problems with communications at 12 GHz, which may be a offset by the advantages ..... N8RK 26
- **The Fun-Vac: A Synthesis of Old and New** - This one-tube transmitter combines the circuits of the fifties With the technology of the eighties. It also keeps your coffee warm ..... WA0RBR 32
- **Adventure in Sarawak** - Two DXpediuoners journey to the land of headhunters - and send a signal to the rest of the world ..... VK9NL 42
- **Put 2 Meters in Your Shirt Pocket** - Radio Shack's Pocket weather radio makes a dandy 2-meter receiver. A few quick modifications will get it right on target ..... K3PJG 46
- **The Secret Telemetry of OSCAR 8** - Do those numbers from the sky mean anything? You bet ..... K5OM 52
- **Scandinavia: The 2-Meter Dream Vacation** - Licensing frequencies, and procedures- it's all here. All you need is a plane ticket ..... WA6OGW 58
- **Twisted Remote Control** - This circuit is easy to build and easy to use. The twist is that you probably own the most important part ..... WD5JWY 64
- **Take Your IC's Temperature** - Like people, solid-state devices get sick if they get too hot. W3KBM provides a way to answer the burning question, "How hot is hott" ..... W3KBM 70
- **The Q-Master Cavity Filter** - A high-Q filter that uses no copper and no silver-plating- just coffee cans and some ingenious thinking ..... KB6AL 74
- **Push Your Radar Detector to the limit** - Without this simple modification, you won't know what you are missing - until it's too late ..... W5LFM 86
- **Personalize the M600 RTTY Program** - Now you can design and save your own version of this popular software parkage. All it takes is a POKE or two ..... VE4AFO 94

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## April 1983 (#271)

- **Pedal Power: A Perfect Field-Day Generator** - This bicycle-driven power source is easy to build and guaranteed to get you in shape. No heavy breathing into the mike, please ..... KN6H 12
- **No-Crash Autopatch** - Dialing and driving don't mix. Build this autodialer and let its fingers do the walking-not yours ..... W3ZC 20
- **Turn Mobile-Rig Whine into a Whimper** - From brute-force filtering to solid-state regulation, K4AJQ has the answers to mobile noise ..... K4AJQ 30
- **Exploit the Hidden Interfaces of the TRS-80** - Sound synthesis, a programmable timed on-off switch, and a CW keyer are all hidden in the TRS-80 You just have to look in the right place ..... WB9EGA 32
- **New England's Nicad Per-Charger** - Build this and get state-of-charge readout, automatic

shutdown, and charge maintenance for your HT. This could be the gift of life for your battery pack ..... K1QPS, WA1UNU 38

- **Immortalize Your IC-2AT Battery Pack** - Why waste your nicads when you're in the car? Build this miniature power supply and your batteries will last forever ..... KP4AQI 40
- **Unlock the New Electronic Mailboxes** - MSOs are at the forefront of amateur radio's vast communications revolution. WB7QWC shows you how to tune In, log on, and not drop out ..... WB7QWC/9 44
- **How E.T. Really Called Home** - If it were not for an inventive ham, E.T. might still be trying. In this exclusive article, the designer of the little guy's communicator unveils its Inner workings ..... K2SSQ 52
- **Buyer's Guide to Dayton** - From securing accommodations to planning your expenses, WA4BPI helps you make the most of your Hamvention buck ..... WA4BPI 56
- **The Best Way to Mount Your Mobile Rig** - If you have a van and HF gear, this is what you need to put them together- including a movable mount ..... KE7X 64
- **The Florida T-R Switch** - Get your 2m amplifier out of the way- without a relay ..... W4HJW 83
- **Build the Deadeye Dish Controller** - Tired of taking potshots at satellites? With the flick of a switch this easy-to-build rotator will hit the bull's-eye every time ..... W5JG 84
- **The Ultimate Protection Plan for Your HT** - Bangs, bumps, scrapes, and crashes make life tough for HTs. Make these modifications to protect your investment ..... K2YKE 92

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## May 1983 (#272)

- **Construct This Classic Transmitter** - From the era of the tube comes this ageless design runner-up In 73's Home-Brew II Contest. It's perfect for a flrst project or as a backup rig ..... W1BG 14
- **Build the Revolutionary Parastat** - After some rule-bending and wire-straightening, N6LM discovered the parastat antenna It has gain when you want and a null when you don't ..... N6LM 24
- **Talk Softly and Load a Big Stick** - Turn a six-foot stick Into an antenna that will ramrod your signal into the ether. And when you're off the air you've got a coat rack ..... KC2NT 26
- **Build This Cornerless Quad for 2 Meters** - Here's an antenna that you can cut corners on All you lose is high cost ..... K6KTS 30
- **Tuned Feeders for Oddballs** - To get that good DX you've been missing, add some versatility and multiband capability to your wire antennas ..... W0VM 38
- **Condo Secret Agent** - The word at many condominiums is "no antennas allowed." Here's how one ham survived ..... K0REC/4 44
- **Make the Icom 720A Work for You** - This rig knows when you change bands, so why not let it switch your antennas? Build this simple add-on and let your voltage do the work ..... N4BL 46
- **The New Communications: VHF Mailboxes** - Join the growing wave of hams using digital techniques to get their message across. AF2M describes the (log) ins and outs of mailbox systems ..... AF2M 48
- **The Morning Beverage Antenna** - If you are a coffee drinker and you work 2 meters, you'll love this antenna. W4FXE shows you how to get wide bandwidths and small size at low cost ..... W4FXE 54
- **Try Out a Low-Level Lazy Loop** - It may be only 10 feet up, but this aerial is no worm-burner. Better still, it will fit almost anywhere ..... W1XU 56
- **Gin Pole for Peanuts** - Ever pull yourself up by the bootstraps? Build this gin pole and let it do the same for your tower ..... N4UH 58
- **Coax Connector Workshop** - Tracking down feedline-related problems can make strong men cry. By starting out right you can avoid hassles ..... N1BLH 60
- **Make Your Noise Bridge Even Better** - Use these shortcuts for easy calibration and give your transmitter 1:1 vision ..... K4KI 64
- **Antenna Refinishing the Easy Way** - When a vertical begins looking like a rusty downspout it's time for some maintenance. Here's how K6EW saved a hamfest special ..... K6EW 70
- **73 Cents for a Voltage-Transient Detector** - Forget those expensive and complex Insurance

policies Here's the best protection you can get-and the cheapest ..... WB8OWM 83

- **Build the Armchair Satellite Tracker** - Simple and cheap, this setup will follow OSCAR around like a dog. Put it together, lean back, and let this control system do the work for you ..... K3LF 84

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## June 1983 (#273)

- **D'Arsonval Dossier** - How these meters work and how to make them work for you is no mystery. Discover the inner machinations of the D'Arsonval movement for yourself ..... W1OLP 20
- **Save Money on Used Meters** - Does it work or doesn't it? This simple tester spots real hamfest bargains ..... W3QOM 19
- **Live, From Across America-It's Field Day!** - The Corpus Christi Amateur Radio Club had helicopter TV coverage of its activities. Club member WB4EMI unveils the secret behind their success ..... WB4EMI 22
- **Construct the Cyclops Dip Meter** - W4ATE's unique single-coil design captured an Honorable Mention in 73's Home-Brew II Contest. Now you can build this award-winning circuit for yourself ..... W4ATE 26
- **Be the First on Your Block with a 2-Meter Dipole** - A few safety pins, some wire, and a little rod stock will make a portable antenna perfect for the traveling ham ..... W9HD 30
- **Two Meters for the Price of One** - The oft-ignored shunt principle will turn an everyday junk-box meter into a surprising supermeter. The key is a piece of solder ..... KB2JN 34
- **Strangle QRM with Your TS-830s** - Simple filter modifications will help your Kenwood choke out Interference KA2R gives you the lowdown on how to do it ..... KA2R 36
- **Smart Meters: The New Movement** - Turn your passive meters into active error-correction systems. W4RNL's innovative circuits make it a snap ..... W4RNL 42
- **A QSL Assembly Line of Your Very Own** - The problem: a stack of QSL cards as high as Mt. Everest. The solution: a program that will make your TRS-80 climb the mountain ..... WB8JEY 48
- **Get Accurate with the Digital-Grid Power Meter** - Your final input power is instantly accessible with this easy add-on ..... N1II 50
- **Diary of a Partially-Sighted Ham** - Eyesight is not a black and white issue. Here are some tips for hams in the grey area ..... WA6CNN 54
- **Hot-Spot Metering-Automatically!** - Here are money-saving designs that will let one meter do the work of several. Keep in control and keep your change, too ..... W4RNL 56
- **Build the Weather-Grabber** - Don't know why there's no sun up in the sky? With this simple converter, you can listen to National Weather Service forecasts on your 2-meter rig and find out ..... N1II 84
- **Kill Power-Line Interference** - You don't have to be a big-game hunter to find the source of that annoying noise. All you need 1s your rig and your good hamming habits ..... K3UK 92

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## July 1983 (#274)

- **You Can Build This Code Trainer** - More than a mere code-practice oscillator this CPU-controlled trainer features burned-in practice groups Flick a switch and you have a keyer ..... K7ZOV 12
- **The True Story Behind Heard Island** - Fighting bad weather, shady ship owners, and bad press, the HIDXA expedition forged its way to the DXer's dream. But getting there was only half the battle ..... VK9NL 20
- **More Stable Than a Rock** - An Honorable Mention winner in 73's Home-Brew II Contest, this 10-MHz generator is a sure cure for the drifting frequency blues ..... DJ3NW 32
- **Build the Billboard Keyboard Keyer** - Get perfectly-tuned CW without a buffer. Then join the crowd at 60+ wpm ..... KD7S 44
- **Construct the Lead-Foot Key** - If you like your CW In the fast lane, you'll love this key And it is guaranteed not to slip any speed ..... W5JQE 48

- **The \$2 Infinite-Memory Keyer** - Take a break Your cassette recorder will send any message for you ..... W0XI 50
- **Apple, Morse, and You** - Simple software and cheap hardware make for a great CW keyboard recipe Just add one operator ..... AF2M 54
- **Micro McElroy** - Is Pet BASIC fast enough for solid CW copy? You bet-and this program will work miracles with a sloppy fist ..... VK3BHM 56
- **QRP Keyer for Misers** - Get machine-perfect code with this keyboard. All it costs is 30 mW and a few dollars..... VE7DHD 58
- **The Easy FIFO Keyboard** - First in, first out means you type as fast as you want to. It will send at the speed you set..... N7BH 64
- **Down-Under Depth Sounder** - Get your feet wet with this Australian construction project We promise that you won't get In over your head ..... Harleck, Dawson 82
- **The ROM-less, RAM-less CQ Sender** - Automatic CW can be yours for the price of a few diodes. And you can reprogram without spending a dime ..... VU2VIZ 90
- **Yasme and the Call of Abu Ail** - It was just a speck in the Red Sea, but it created pileups as big as a mountain ..... W6KC, W6QL 94

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## August 1983 (#275)

- **Construct This Customized Power Supply** - Whether you want 5 Amps or 30 this supply can give it to you. But you only pay for what you need ..... W9ODK 8
- **VisiCode: The VIC 20 Way to Extra Class** - First you get random practice groups Then you get the answers ..... W7LTH, KA7AQA 14
- **Running Scared at Spratly** - Only steel nerves and luck stood between the 1979 DXpedition and disaster ..... KB7NW 20
- **The COR of a Reliable Repeater** - Carrier-operated relays are the most-used circuits In any repeater. Use this simple design to get maintenance-free operation ..... WA7SPR 24
- **Precision Speed Control for the Billboard Keyer** - Get more for your money by addling this circuit to last month's project ..... KD7S 26
- **PC Boards for Penny-pinchers** - Get picture-perfect circuit boards without buying a darkroom ..... W2HCQ 30
- **Faultless SSTV Picture Preservation** - The dynamic duo of computer and printer helps save those perfect moments. Just add this program ..... KF9X 38
- **Save Your Signal with Forward Error-Correction** - In a hostile signal environment, you need all the help you can get ..... W9JD/2 44
- **A Colorado-Style Battery Monitor** - Texas has its barbecue and Chicago its pizza. Colorado's claim to fame is this near-perfect device ..... Wilson 48
- **The Totally-Modified 2000** - Take Azden's popular 2-meter rig and add all the extras you ever wanted ..... W1GV/4 50
- **Send Your TR-7800 to Obedience School** - This Kenwood rig has some interesting habits-such as a slow scan rate. Can you retrain it in one easy session? ..... KE6VK 54
- **Do You Know Where Your Signal Goes?** - it doesn't just sneak off your antenna and hide. Find out where your lobes are and what they look like with this simple procedure ..... N4UH 56
- **Cheap Scanning for the IC-701** - Here's a device that's stingy in cost but generous in benefits ..... AG9D 64
- **To Go Where No Ham Has Gone Before** - Sealand! -An enterprising team of DXers takes to the high seas to work S1, the smallest country In the world ..... DF2AO 84
- **1001 Uses for the 9400** - Experiment WI-5 this cheap chip Ifs the IC you've always wanted, with applications you've never dreamed of ..... W3KBM 88
- **Propagation Explosion on 220** - This theoretical inquiry into the properties of 220 MHz yielded some unexpected results. Find out when and why your signal will be at its best ..... W9MKE 90
- **18 kV with No Transformer** - You need high voltage, but surplus transformers can't turn the trick. Try this solid-state solution ..... WA4WDL 94

## September 1983 (#276)

- **"10... 9... 8..."** - Be ready when the Space Shuttle Columbia carries aloft the first astro-ham. Here's the best way to contact this historic DXpedition ..... WA6ITF 8
- **Join the Packet-Radio Revolution** - Get error-free, high-speed communications -Packet radio's chief architect, WA7CXD, explains what it is and how it works ..... WA7GXD 16
- **Be a RTTY Rembrandt** - Put that award-winning shine on your RTTY pix with these tips from a RTTY artist's sketchbook ..... WA2OQJ 28
- **How to Increase Your QSOs** - N6HYK's seasoned advice will add spice to your CW contacts-even if you aren't a Novice ..... N6HYK 34
- **Home-Brew an Apple Computer and Save!** - In this 73 exclusive, KB2CA reveals the secrets of Apple construction From key board to motherboard, it's all here ..... KB2GA 40
- **Build This Super Switch** - The only thing this switch won't do is brew your coffee It's the lazy mans delight ..... K4YS 52
- **The Amazing Cylindrabola** - This microwave antenna is easier to build than a dish But it works just as well ..... WA4WDL 54
- **Colorful RTTY: An Advanced System for the TRS-80C** - It's all here-a TU program, and modem to turn your CoCo into a professional-quality RTTY terminal ..... K6AEP 58

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## October 1983 (#277)

- **Six Antennas from Three Wires** - With these modified Beverage antennas, you double your directions without doubling your cost ..... K1VR, N1RC 10
- **Join the Packet-Radio Revolution -Part II** - Warm up your soldering irons. This part offers the nuts and bolts of building your own TNC ..... WA7CXD 20
- **Become a Low-Band Pioneer** - Where does an audio transistor become a gccc rf amp? On 1700 meters, of course ..... KL7GLK 34
- **The Phantom Antenna of Possum Hollow** - The boys needed a good antenna fast-before winter set in. Thurman's mysterious story was the solution ..... W8VFT 40
- **Your Enemy, Feedline Loss** - Let your swr meter stop this demon before it creeps up on you ..... K3CSV 42
- **PVC Meets VHF** - Flush high cost down the drain and build these cheap antennas. The gain is free ..... WA2NUB 44
- **A 10-MHz Antenna for \$10** - If you're still on 30 meters, the Hanging Helix may be your last chance ..... K9AZG 46
- **Slaughter's Sway-Bar Forest** - Are trees an antenna hindrance? Or are they the means to the best antenna collection you ever had? It just depends on your outlook ..... K9AZC 50
- **The Phase-Shift Oscillator Goes Hollywood!** - This circuit can be the star of your audio designs. All it needs is a tweak here and a taper there ..... Goodson 54
- **Build the Harmonic Zapper** - When the TV starts sounding like Donald Duck, you need this 20-meter trap ..... W2YW 56
- **The Anti-Gravity Antenna-Erection System** - Now you can put your wire antennas as high as you want-maybe ..... W0YBF 58
- **Your Own Beam-Bruiser** - Muscle your beam around from anywhere with this local control box it's perfect for serious tower work ..... WB4FXD/1 62
- **Put Together the Shawnee Logic Probe** - It's better than a tomahawk when you're on the warpath against glitches ..... Roth 66
- **Take the Drudgery Out of Contesting** - Let your Radio Shack computer dupe the log while you relax ..... WB0NFX, W0CZ 84
- **World's Fair Super Squelch** - With this two digit DTMF decoder-a perfect club project-you hear only calls meant specifically for you ..... WA4TEM 86

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- **Construct the Callsign Power Supply** - KA1QZ put together aesthetics and electronics to produce a power supply that gives you more than good regulation ..... KA1QZ 10
- **The Magical Audio Filter** - A variable frequency notch filter plus a peaking circuit will do wonders for your reception. And this project will almost build itself ..... W6QIF 14
- **Keyboard Your Way to Happiness** - If happiness is perfect Morse, then this project is pure heaven. Special construction tips make putting it together as much fun as using it ..... N7AGK 20
- **Reveal the Receiver Behind the Specs** - Here's a program that will make sense out of all those numbers ..... N6RY 36
- **Terrific Top-Band Conversions** - Jump up to 160 meters and beat the coming sunspot drought. Surplus gear will get you there cheaply ..... K9QLL 40
- **Cardsoft: The Transportable QSL Generator** - If your machine runs Basic, it can run this program ..... WB5LLM 46
- **The Six-Meter Vfo That Won't Quit** - This hybrid has the best of both worlds. It's as steady as a rock and has broad-band tuning ..... N7APE 48
- **Foolproof Logging** - KL7CRF designed a logbook program that any TRS-80 owner can use. And if manages your QSLs, too ..... KL7CRF 58
- **The Program No Net Control Should Be Without** - Every net generates lists. Keep yours up to date with this TRS-80 Basic program ..... WA4VLE 62
- **The World's Cheapest Modification** - All you need to put the FT-101 on 30 meters is three pieces of wire. What could be cheaper than that ..... WB9DDF, W0UR 70
- **A Two-Tone Squelch to Solve Your Scanner Woes** - Selective listening is the key to success This squelch will help you cut the chatter ..... WA3REY 84
- **Electronic Mail Comes of Age** - These mailboxes may be thousands of miles away, but they're instantly accessible ..... K0VKH 86
- **Octal Ingenuity** - It's an old radio. You can't find a replacement tube Now what do you do ..... W9SIA 88

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## December 1983 (#279)

- **Code Practice: Have You Seen the Light?** - This simple cpo is the best weekend project under the sun -or bulb ..... Davidson 10
- **Unlimited Guarantee for Power Supplies** - Plan for the worst and you'll get the best, says KC0EW. He might be right ..... KC0EW 20
- **PC Boards in a Flash!** - Make circuit boards without expensive equipment. All you need is a light and a fast switch hand ..... KA1FJR 28
- **"We've Been Boarded!"** - When the Lorelei strayed into Nicaraguan waters, hams came to the rescue. Here, the net results ..... W9UUC 32
- **A Good-Buddy Power Booster for Converted CBs** - KE4VP turned an illegal amplifier into a law-abiding citizen. You can, too ..... KE4VP 36
- **TVRO Troubleshooting** - Get your Earth station off the ground with these signal-enhancing hints ..... N8RK 40
- **Streamline the IC-25A** - Add a dual-speed vfo and remote control. You can do it in a few easy steps ..... W2PQG 48
- **A Perfect Match for the HW-8** - Heath's little rig is the QRPer's dream come true. So is 30 meters. Join them with this super-fast mod ..... WA6BJH 52
- **Don Wallace: Superham** - Meet W6AM, the Grand Old Man of amateur radio ..... W6CK 56
- **Courage for Would-Be Hams** - Here's the inside story of how a worldwide network of hams is

- helping handicapped people get their licenses ..... Norgard 70
- **Micro Power for the DXer** - This TRS80 program will help you cure that DXCC fever ..... WO4L 77
- **Warning: Your Time's Up!** - Don't get taken by surprise. This timer add-on will tell you when to ID before it's too late ..... N7BH 78
- **Babysit Your Battery** - This intelligent charging circuit will pamper your emergency power system. It's what every repeater needs ..... WA4TEM 86
- **Make a Good L-Meter Even Better** - Give the N5CC design a boost. Tack on this two stage buffer and dodge those sneaky loading problems ..... WB1HKU/6 94
- **Ironclad Repeater Control** - With 12 outputs and tamper-free access, you can keep a firm grip on your repeater's operations. And this circuit keeps the price from getting out of hand ..... WA7SPR 100

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## 1984

### January 1984 (#280)

- **Breakthrough in Boston: The Birth of Crosslinking** - W11UKZ built this box. It's small and it works. The question is whether you're ready for it ..... W1UKZ 10
- **Grenada Log** - With a body-bag rig and gas from a bike, a ham hustled home the news. Here's history happening ..... K1XR, N8RK 20
- **Instant Pane Relief** - This is the only notch filter for windows we've ever seen. If you can figure it out, you'll beat the feedline flu ..... KC8UD 22
- **Sound Off!** - Here's the perfect S-meter add-on for the repeater that has everything. The higher the beep, the better the signal ..... K3JML 28
- **Some Alarming Techniques** - These burglar-proof circuits will stump second-story men and amaze possible thieves-as well as you ..... WA4CCA 32
- **Join the Packet-Radio Revolution -Part III** - Don't mess up. Packet protocols and procedures are all-important, says WA7GXD, and he's been right so far ..... WA7GXD 36
- **The CW Stationmaster** - Regeneration turns the worst signal into a CW symphony. And that's not all you get when you build this station accessory ..... W4RNL 46
- **Top Drawer, Micro-Style** - Building circuits is fun, but drawing them isn't. Let your Apple do the drafting ..... K3LF 56
- **Trade Secrets of Mobile Installation** - Mounting a rig In your car is not as hard as it seems. Find out how the pros do it ..... K4TWJ 64
- **Around and Around and Around** - There's got to be a better way to wind your coils to specs. Build the Q-meter and get the exact inductance you need ..... N7APE 70
- **On the Move with 10 FM!** - These modifications for Comtronix and Azden rigs will get you on your feet in a hurry ..... W7AR 84
- **Thank You for Listening** - Build this simple speech expander and stop shouting. Your DX friends will thank you and the QSLs will roll in..... VE1BZJ 86
- **Secrets of Nicads** - Nicad batteries will save you money. Or will they? ..... WB2FYW 88
- **The Edison Effect** - American inventor Thomas Edison is remembered for his array of electrical firsts. But lesser known is his invention of the first wireless telegraph ..... WB2MVK 90

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### February 1984 (#281)

- **This Antenna Is Too Good To Be True** - It's cheap. It works well on all bands. And it radiates a super signal ..... W4HDX 10
- **Construct the Minuteman Timer** - As faithful as a grandfather clock. This timer tells when to ID - and when not to ..... KA8QBQ 14
- **The Secret of Remote Control** - In Inside those miniature planes lie some sophisticated circuits

..... WB3BQO 18

- **Calculate Your FT-101** - Here 's how to treat your trusty FT-101 to a truly automatic digital display and get a frequency counter in the same box-at the flick of a switch ..... VK8DE 22
- **Strictly for FM Deviates** - Ever wonder how the- modulation is on your FM rig? Try this simple deviation meter and find out ..... KA8OBL 36
- **Build a Better Hamfest** - These hints from 25 years of experience will help make your event a success ..... Housholder 40
- **Caveman Radio** - With underground inductive transmission, 300 feet is almost DX ..... W9MKV 42
- **Here's the Split-Second Timer** - In the darkroom or the shack, this beeper has 1001 uses. Its simplicity makes it the perfect beginners project ..... WA3REY, WA3PTU 54
- **Peak Your Picture with Home-Brew SSTV Gear** - Go from gray scale 10 color bars with these simple generators. No monitor should be without them ..... Cikas 60
- **Op Art** - Include the ubiquitous op amp in your next circuit KC0EW tells how ..... KC0EW 62
- **Put the DX World on a Screen** - Everything you need to know about a country can be at your fingertips, you need is a VIC-20 and this program ..... WB7RIX 69
- **Convert the Oddball Hy-Gain Board** - Some of these boards have two crystals and some have three. Now you can put them all on 10 meter FM ..... N2DS 77

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## March 1984 (#282)

- **In Search of the Shuttle: Fun, Frustration, Fatigue** - From Maine to Hawaii, our special correspondents gave W5LFL their best shots. Thank them ..... W5LFL 10
- W5LFL report, Burbank, California ..... K6DUE 10
- W5LFL Contacts ..... ARRL 11
- W5LFL report, Saugus, California ..... WA61TF 12
- W5LFL report, Westbrook, Maine ..... KIEFZ 14
- W5LFL report, Nashua, New Hampshire ..... WB1BRE 16
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- W5LFL report, Anchorage, Alaska ..... KL7FKO 50
- W5LFL report, Hilo, Hawaii ..... KH6B 52
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- W5LFL report, Some Final Thoughts ..... WA6ITF 53
- **Switch Tricks** - Ever had trouble setting up switching? No more. The Minnetonka Master makes it easy ..... KA0QSC 54
- **LED's You Have Never Seen** - What are these little lights? What do they do? This is the book ..... W5LFM 58
- **Take the Two-Tone Challenge** - Does your transmitter put out a clean signal? Build this two-tone audio generator and find out ..... W8DCC 84

- **Build the NASA Beeper** - Space-wise communicators use this device for one good reason: clarity ..... KQ4G 88
- **Sky Power** - If you're a meteor-shower expert, don't read this. Otherwise, learn ..... WB4CHZ 90
- **Wet Battery Quiz** - And you thought you knew it all ..... VE3AZX 92
- **Another Antenna Approach** - This Timex/Sinclair program goes to great lengths ..... AD1B 96

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## April 1984 (#283)

- **Doing It At Dayton** - This unofficial Hamvention handbook helps attendees and dreamers alike ..... WA4BPI 10
- **Me and My Stupid Old PMOS Converter** - At last, there's an easy way to get -12V from a +5-V power supply. Who said "trial and error"? ..... WB1HKU/6 14
- **Watch That Signal!** - Haul out your old oscilloscope and turn it into a signal monitor. The conversion is easy and the price is right ..... W4RNL 20
- **Digital Design: How to Interface ICs** - Connect ICs to the outside world with these hints from the author of "Digital Basics" ..... K4IPV 30
- **Emulate an EPROM Elephant** - The portable RAM-faker never forgets. Well, hardly ever ..... McCarthy 40
- **Crystal Microwave** - "Easedropping" on this part of the spectrum is up to you. Here is a simple way to start ..... WA4WDL 42
- **Take A Trip to Europe** - These tips from the world's top SWL make it possible ..... Peterson 48
- **Four Bands, One Whip** - Quadruple your mobile operating pleasure, please, but don't blame us ..... K3OF 56
- **The Conlog Solution** - What's the key to winning contests? Put an Atari and this program at the helm of your station and find out ..... N5ATD 62
- **Ishmod's Journal** - What happened in 1963 finally surfaced in 1983. Was he a fool? ..... Whipple 64
- **The Terminal Terminal Unit** - Build this variable-shift TU. Its performance will knock you dead ..... K3PUR 70
- **Wheeling and Dealing with Preamps** - For a switch, from the remote hills of West Virginia comes a great antenna idea ..... W8PMS 84
- **How to Have a Sunny Field Day** - When Michigan hams turned to solar power, they got more than they bargained for. Does success mean anything? ..... W8YZ 100
- **Painless OP-Amp Filter Design** - Custom applications can be easy. Just follow this step-by-step guide to a perfect op-amp filter ..... W4RNL 102

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## May 1984 (#284)

- **From Base to Beams** - Home-brew from the ground up - Here's how to build a tower and top it off with performance-proven antennas ..... W6TYH 10
- **A Little Gem for QRP** - The T2FD antenna thinks it's a full-size rhombic. Feeding is believing ..... W8VFT 26
- **"The Tops of the Palm Trees"** - 20,000 QSOs. Coral Sea. Banyandah ..... VK2BJL 28
- **How to Gain with PVC** - This could be history's cheapest quad. Try water pipe on 2m ..... WB6BHI 37
- **Helicoids** - Few people understand how to build these versatile whips. This article takes care of all the its, ends, and butts ..... K2KSY 40
- **The Big-Car Break-Down Beam** - Try two-meter luxury the easy way ..... N3BEK 46
- **Simple Parabolic Theory** - With a little bit of math -presented here- you can understand, design, build, and enjoy these effective antennas. Hopefully ..... OA4KO/YV5 52
- **Control Your Mobile Power** - Can commuting be a daily QSO party? Yes, with this no-payment installment plan ..... KBSQZ 56

- **Virginia's Antenna Farmer** - From Falls Church comes a simple message to fellow hams: Simple antennas work! ..... WA4BLC 60
- **Throw in TV** - Why not? This helix-building experience includes everything else ..... WA4WDL 64
- **Yagi Fear?** - Forget it. Whether for construction or companion, this Atari program zaps every design problem ..... W6WTU 84

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## June 1984 (#285)

- **Easy Berardi Building** - You can count on this simple frequency counter from Arizona ..... Berardi 10
- **Don't Grope in the Dark!** - Let a simple card-file box be the brains of your own emergency lighting system ..... W7RXV 16
- **Flying High with Two** - Here's how a hand-held makes for some ultralight Michigan madness ..... WB8DQT 20
- **Creason's Do-It DVM** - The more Sam builds, the more smart people pay attention ..... K6EW 26
- **Meeting Ends Make** - These ten tips will better your club. Are you friendly or frigid? ..... N6HYK 30
- **Tester Project: England '83** - Wherein you flash-chance transistors, chap ..... Penfold 34
- **Sounds Good to Me** - Two Texans put together "73 Morse RIT." It's the best Basic VIC-20/C64 code program you will ever see ..... W5VKC/1, WB5AYD 38
- **Piggy-Bank Repeater Project** - Set it and forget it. This inflexible controller doesn't bend the budget ..... KT2B 42
- **Not-So-Famous Garriott Words** - In one of his first post-STS-9 appearances, W5LFL spoke at Foothill (CA) College. We record his dedication to amateur radio. ..... N6BIS 48
- **Better the R-70** - At your own risk, you can soup up one of Icom's super receivers. How to do it was not read here ..... KE4AQ 54
- **Elegant Rotating** - K9AZG did it right. W4RNL makes it better. For sightless and sighted hams alike, this update to a 1982 article will be revealing ..... W4RNL 60
- **Requiem for the Tube** - This pleasing project is perfect for pentodes. It could be the last time you use them ..... WA2EWT 68
- **New Orders for the R-109** - Two bucks and ten minutes are all it takes to reenlist a vintage receiver ..... K8AXH/7 70
- **Try Quality Code** - Using this Mod III update is much simpler than saying its title twenty times ..... K6APW 78

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## July 1984 (#286)

- **Shoot at Will** - KK2Y's Dayton mandate was to capture things on film. He did it. Enjoy a slice of Hamvention ..... KK2Y 10
- **Secrets of Cordless Phones** - Is privacy sacred and range not? Maybe some hands-on research can help you decide ..... Haas 20
- **Modern-Eyes the S-Meter** - Here's how to de-strain your baby blues by adding a simple LED readout ..... Patterson 24
- **Let's Have More Hams** - Part I: How to organize and run a Novice class ..... AD0K 26
- **Let's Have More Hams** - Part II: How to take and pass FCC exams ..... KC3HW 30
- **Son of Nicad Conditioner** - This intelligent discharger knows when to stop and tells you how much time it took ..... W1GSL 36
- **Perfboard and Soldertail?** - Definitely. What is commonly done never written up (until now) but always appreciated ..... W4RNL 42
- **Watch a Warhorse Work** - With a new tank circuit, the SB-221 does great things for 160 and 10 ..... W3JIP 48

- **Random VIC** - Code-loving Commodore addicts asked for this. Ye shall receive ..... WB7RLX 66

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## August 1984 (#287)

- **Top-Notch Tuner Time** - Can't get your signal out of the backyard? Build KC2NT's antenna matcher and hear what you've been missing ..... K2NT 8
- **Cheap Power Ploy** - This rugged supply will give you more power than you ever dreamed possible. Have we gone too far this time? ..... K9QLL 10
- **Penn's Two-Tone Gadget** - Clue one: We're talking about lab quality. Clue two: Get your junk box ..... W1BG 21
- **Yaesu, Icom Graft Revealed** - Splice Icom's headset to Yaesu's talkie and discover handle happiness ..... K2OAW 32
- **Stare-Way to Heaven** - At the Arecibo observatory, the sky's the limit. Who said size doesn't matter? ..... AJQN 34
- **Counter-Productive Basics: Part I** - Digital needn't be difficult. Let K4IPV guide you through the fundamentals of frequency counting ..... K4IPV 40
- **Messing With Heath** - This 101 control mod proves fun and easy with frequency. Your rig deserves it ..... AI7C 46
- **AMTOR How-To** - FEC? ARQ? Don't panic. Timely advice from the father of AMTOR takes the confusion out of our newest mode ..... W2JUP 62
- **Picture-Perfect Audio Filters** - Throw away that antique breadboard and scope. Let your Apple II peak and tweak a soft circuit instead ..... K3LF 66
- **Top-Band Power Punch** - Sick of 5-2 reports on 160? Build this knockout kilowatt amp and make it 59 every time ..... WA0VNY 70

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## September 1984 (#288)

- **Counter-Productive Basics: Part II** - How hard can counting be? K4IPV tells us where the errors occur and how to fix them ..... K4IPV 8
- **Elementary, My Dear: Watts 'n' Swr** - Stop guessing. Build this no-nonsense VHF/UHF wattmeter and save your hard-earned cash ..... KT2B 14
- **Perfect Timing** - Proud of your repeater? Construct this multi-talented identifier and tell the world your who, what, and where ..... VE2DWG, VE2AO 22
- **Quick Qwip Conversion Fax** - Seeing is believing. A few dollars and a weekend will turn this surplus unit into a reasonable facsimile ..... KA9CDL 28
- **No-Etch Circuit Boards** - Produce quality PCs with N6JH's cut and-pry technique ..... N6JH 34
- **Disco Duckie?** - Try some dirt-cheap headphones for your HT ..... N6CSI 36
- **Ntty Grtty RTTY** - Tomorrow, to Morrow, is too late. Build this easy Timex/Sinclair interface today and be on the air tonight ..... WB6CTM 38
- **Easy FSK for the IC-730** - Don't settle for less than complete. Four dollars gives you the RTTY the factory left out ..... WA4TTO 48

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## October 1984 (#289)

- **Find Fault with Your Coax** - Is your cable really doing its job? Find out with this elegant detective method ..... K4IPV 10
- **The Aussie Parasol Beam** - What has twelve corners, three bands, and uses 140 feet of wire? Hint: It's not a quad ..... W6TYH 20
- **The Incredible Broadband Bowtie** - Truly designed for solid-state finals, this 75m antenna features 50 Ohms at the feed-and less than 1.5:1 swr across the band ..... KC3HW 26
- **RX for Ailing Antennas** - Maximize your system's performance with this easy-to-construct noise

bridge. It's just what the doctor ordered ..... K41PV 28

- **Ryan's Vertical Ecstasy** - Warning: Graphic description of vertical antenna array patterns. Explicit CoCo language. May incite construction frenzy ..... WB5LLM 32
- **Try Low and Behold** - Here's a shock: You've been wasting money on towers and poles. W1GV explains why low antennas may outperform high-altitude aluminum ..... W1GV/4 38
- **A No-Holes Barred Beam** - What to do when the lease says "no antennas": Turn your entire house into a broadside dipole ..... WA4WDL 44
- **Another Eggbeater** - Don't be a VHF weakling. Pump up your performance with this simple 2m omni ..... WD5DNL 48
- **A Tree-Mendous Vertical** - Build an 80m DX-getter that really grows on you ..... KS4B 62
- **When Darkness Calls** - On 160m, success means diligent planning. These tips on gray-line propagation are your key to Top Band DXCC ..... VE7BS 66

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## November 1984 (#290)

- **Color Computer SSTV: Part I** - Turn your CoCo into a complete SSTV terminal How? First, build this high resolution display system ..... K6AEP, WB8DQT 10
- **Wrap Up TVI!** - Can you endure another evening without transmitting? Use this simple cure to choke out television interference forever ..... KR7L 26
- **But I Know How To Solder!** - Anyone can dribble hot metal over a joint, but it takes an artist to really solder. Are you a Picasso or a pig? ..... WD4S 28
- **Free-Form Filter Design** - Build the ultimate audio filter: high-pass, low-pass, bandpass, notch, variable Q and cutoff frequency, all in a single circuit. Circuit? Sorry, that's a single chip! ..... KA4QVK 34
- **Your Own Optoelectronic Anemometer** - Light contral and car-top calibration make this project cheap to build, easy to align, and extraordinarily accurate ..... K3VDB 42
- **Rampant RTTY** - Create the ultimate mallbox! K0WVN describes a system that operates from 45 to 1200 baud with dual shifts-automatically ..... K0WVN 50
- **Decode Soviet Space Messages** - As you read this, mysterious signals are being beamed into your shack. What do they mean? Where are they coming from? Use WD0BCI's satellite-telemetry reading program to uncover facts ..... WD0BCI 53
- **The End of the Line** - What's the point of sending power up the coax if it never reaches the antenna? These tips on connector installation and care will help maximize your station's signal ..... WB5LBI 56
- **A Useful Present You Can Build** - How about a high-tech holiday gift? ..... WB4YOD/PW8ZAF 58
- **Ham Over Fist** - Here's a VIC-20 CW program with a twist: Its real-time display lets you watch your dits and 'dahs dance across the screen. But be forewarned-you may not like what you see! ..... WD8BHH 64
- **Homemade Defroster Shutoff** - This simple gadget has nothing to do with amateur radio, but its a neat little project anyway ..... KB2WM 68

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## December 1984 (#291)

- **A Times Square Data Display** - Build this scrolling touchtone decoder for your favorite repeater. What you see is what you hear ..... WA4TEM 8
- **Color Computer SSTV: Part II** - Complete the picture by adding weather-satellite facsimile to your new color SSTV system ..... K6AEP, WB8DQT 18
- **Transistors: A Biased Approach** - In Part I, KC0EW takes the mystery out of solid state with clear talk and practical examples ..... KC0EW 34
- **Yikes! Spikes!** - You paid good money for that computer system. Now spend a few hours building an insurance policy against voltage spikes ..... W1UO 40

- **Give Your Micro the World** - There's no voodoo involved in analog-to-digital conversion. In fact, here's a project for your TRS-80 that uses only two chips! ..... A1OZ 44

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## 1985

### January 1985 (#292)

- **Eight Mods for the IC-730** - Customize your ICOM! Snip here, solder there, and enjoy perfection ..... N6HI 10
- **VIC RAMification: Part I** - Here's how to turn 3 ICs and half an hour into 24K of extra VIC-20 memory ..... Brefini 18
- **VIC RAMification: Part II** - W6LOB fills the 3K gap of Part I with a quick piggyback RAM expansion ..... W6LOB 22
- **Transistors: A Biased Approach** - In Part II, we evaluate base current and gain and use this information to design a working transistor circuit ..... KC0EW 26
- **Automate the FT-757** - Ready for robot radio? An inexpensive micro is all that you need to computer control your Yaesu ..... KA6IFQ 30
- **That Glorious Gonset** - With 300 Watts on 2 meters, the Gonset 972 thumbs its nose at solid state. Rebuild one and be heard! ..... KT2B 34
- **A Space-Saver Seven Megger** - Stuffing full-wave 40m loops into tiny places is W8TYX's specialty. We finally got him to tell us how he does it ..... W8TYX 44
- **Shoestring RTTY** - Build a commercial-quality computer interface for under \$30 ..... W9ODK 46
- **Is Your Repeater Dying?** - With this 16 channel telemetry encoder, you have a remote chance of finding out ..... WA4TEM 50
- **How Good Is Six?** - Try 50 MHz with a transceiver you've built from scratch. There's no greater pleasure than saying, "I did it myself!" ..... KL7GLK 57

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### February 1985 (#293)

- **VIC RTTY Resource** - Is your VIC-20 ready for RTTY? Make it happen with N5ALE's foolproof software! ..... N5ALE 12
- **Satellite Supremacy** - Sometimes 15 Watts just doesn't cut it with OSCAR 10. The solution? Use W2GEF's 60-Watt uplink amp-stripline construction makes building it a snap! ..... W2GEF 18
- **CB to Six** - Why stop at 10 meters? KB5LF's Hy-Gain conversion will take you to VHF just as easily ..... KB5LF 22
- **Future Schlock** - The strange tale of the KA5S experiment. Was he a genius or a madman? ..... KA5S 30
- **Swr: A Modern Myth?** - From rig to radials, noted expert W6YUY reveals the path to a perfect antenna system. Be ready for a few surprises ..... W6YUY 32
- **Ollie's Folly** - Circular polarization on HF? A forty meter helix with oil-drum forms? W1ZB's signal runs rings around the rest. Folly, indeed! ..... W1ZB 42
- **Build a Better Box** - Most hams cram their circuits into any old case that's handy, but a little planning can turn a so-so project into a master-piece of packaging ..... W4RNL 44
- **Super Surplus Surprise** - It's super: 50 Watts on 160,80,40, and 30 meters! It's surplus: That means inexpensive! It's the GRC-9: Still surprised? ..... K9RLF 54
- **The Texas Trans-Tester** - Here's how to measure small-signal gain with a transistor checker you've built from scratch ..... KG5B 60

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### March 1985 (#294)

- **TVRO Trivia** - To those would-be satellite enthusiasts wondering which way is "up," W6SMJ

offers the comfort of his years of experience in home satellite TV reception ..... W6SMJ 14

- **All This and PCII!** - Would you like a fully-programmable Morse keyboard that will balance your checkbook and play Sousa marches? Then read on! ..... W4FXI 26
- **Do Volunteer Examiners Work? -A 73 Special Report** - National VEC W5YI says yes. He should know ..... W5YI 28
- **The Incredible Digiohm** - How to put ten million resistors in the palm of your hand? Build the ultimate substitution box ..... Rich 34
- **Speech! Speech!** - Here's a talking repeater controller that you can build in no time at all. It gives a whole new meaning to the word "vox"! ..... WA4TEM 38
- **So Why Do They Call It Wireless?** - One easy antenna. Five hot bands. Need we say more? ..... WA8JXE 44
- **Cheap Heath Help** - Is your HW-101's offset off? Try this four-dollar fix. Without it, you're being cheated out of QSOs ..... K6YB 48

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## April 1985 (#295)

- **Dateline: Dayton** - It's almost here! Take an inside peek at the what, when, and where of ham radio's biggest bash of the year with 73's annual Dayton Hamvention sneak preview ..... WA4BPI 12
- **Hear, Hear!** - Stop settling for second-rate signals from OSCAR. You've really no excuse. W6I0J's low-noise preamp is easy to build and includes all the circuits necessary for alignment. So do it! ..... W6I0J 20
- **Ishmod's Journal** - What really happened on that lonely, uncharted rock? And what was the eerie glow? ..... Whipple 24
- **Don the Dayton Hat-tenna** - Put a cap on your communications problems with a rubber duck that's heads above the rest ..... WB3CQA 26
- **Zounds! Grounds!** - Here are the down-to-earth details you need to install a perfect ground system ..... K4IPV 30
- **Build the Dixie Whistler** - Adding two-tone SSB analysis to your test repertoire is as easy as one, two, tweet ..... WB5IPM 36
- **In Search Of: RTTY** - Experience the mysterious world of RTTY beyond the band edge, but beware! Its allure's too great for all but the stoutest of heart ..... WA0MRG 48
- **Take A Hike** - Combine a regulated power supply with a lightweight rechargeable battery. Add a smart control system. The result? Incredible versatility! ..... N3BEK 54

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## May 1985 (#296)

- **Discover the Discone** - Is this the perfect aerial? Consider simple wire construction, easy one-time tuning, and flat swr from 3.5 to 28 MHz ..... W1GV/4 17
- **Two for Two** - We respectfully offer a pair of radiators for the two-meter band so elegant, yet so simple, that you will kick yourself for not thinking of them first ..... WA4BLC 22
- **The Snake with LED Eyes** - A tall tale from the Antlers- where the decoration is strange and the stories are even stranger ..... WA8WTE 24
- **Up, Up, and Array** - W6TYH's hybrid collinear will rocket your signal to new heights! ..... W6TYH 32
- **Good to the Last Dot** - Is there life beyond WX HR IS? With these practical tips you'll perk up every QSO and make every contact an adventure! ..... N6HYK 38
- **Porcupine Mobile** - Bristling to work HF from your car? Sport these spikes and hit the road ..... N2CMU 40
- **The Rubber Duck Debunked** - In ten minutes you can have 10 dB gain over your HT's duckie. It's enough to make you try ..... W4NVK 42
- **The No-Baloney Lunchbox** - We suggest you paint this antenna tuner before showing it to your

- friends ..... KR3T 44
- **Rotate the Bobtail Curtain** - How do you rotate one hundred feet of wire antenna? It's simple: Just flip the switch ..... W8HXR 48
- **Alligatedored Antennas** - (clip) it's 30m... (clip) it's 17m... (clip) it's 12m. Get the idea? ..... WA4UZM 50
- **Zuper Zepp for VHF** - Zip up your signal with UZM's planz! ..... WA4UZM 52
- **Phase the Nation** - North, south, esat, or west, you'll be on target with the dobule-X trapped- vertical array ..... KB2XX 54
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- **Tune In the TU-1000** - Has your RTW budget hit bottom? Then dust off that soldering iron- K9EUI's no-nonsense terminal unit gives store-bought performance at a build-it-yourself price..... K9EUI 14
- **Secrets of Telehamming** - When the bands are dead, try trading your transmitter for a telephone. Operators are standing by ..... K9EI 24
- **CoCo's Counter** - Use this dirt-cheap method to tune up your AFSK generator ..... KG4Q 26
- **Is Ham Radio Baking Us?** - What damage occurs when human bodies are subjected to electromagnetic fields is not fully understood. Here, an expert in biostatistics examines the problem from an amateur's perspective-and offers some practical preventative suggestions ..... VE3KSP 28
- **AFSK, And Ye Shall Transceive** - A sine from heaven is what you'll get when you build the AFSK-1020 ..... K9EUI 32
- **Through the Looking Glass** - If you could peek at a RTW signal through magic audio glasses, what would you see? You'll find out with KN4L's Apple opus. a program that whispers. "Run me" ..... KN4L 34
- **Perfection Plus** - It's not often a prize-winning package can be improved. Here's a new look for a popular RTTY tuner ..... W1PDI 36
- **Speak-No-Evil RTTY** - This tiny routine is all you need to transform your Heath H-8 into a RTTY receiving demon! ..... WA6NHC 40
- **On the Flip Side** - Here's how to add reverse shift to your Kantronics Interface ..... K1QPS 42
- **Quash QRM** - Add a "RTTY Narrow" position to your TS-520's mode switch-you'll never copy hits again! ..... KA4MTO 44
- **The D-Day Demodulator** - When the CV-89A joins forces with your micro. you'll take the RTTY bands by storm! ..... WB5LLM 46
- **Slick VIC Trick** - Here's the cheapest way we know of to add a printer to your VIC-20. First, find a Model 33 ..... KW9L 50
- **QSK for Your Vintage Vfo** - All it takes is an hour ..... KA3GCQ 54

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- **ICOM's Extended Play** - Ten minutes with a Phillips screwdriver gives your IC-751 transmit capability from .1 to 30 MHz! ..... KS4B 12
- **America's Dream Array** - Twenty-seven dishes in a twenty-one-mile pattern make for some serious DXing at the National Radio Astronomy Observatory. Galactic DXCC, anyone? ..... AJ0N 18
- **WARC for the FT-101E** - Here's how to join the fun on our new 12-meter band. And you'll be ready for 18 MHz, too! ..... ZS2RH 22
- **The Dayton Downlink** - Optimizing your OSCAR downlink system can be frustrating. Use this easy method to measure your improvements and know just when to stop ..... W9JD/8

- **The 30-Meter-Plus Receiver** - Explore the world of 10 MHz with a solid-state receiver you've built yourself! We've come a long way since oatmeal boxes and cats' whiskers ..... N4EY 30
- **The Incredible Inducto-Gauge** - Measure coils with impunity! Better yet, measure them with this weekend project: a do-it-yourself inductance meter ..... Ketchledge 34
- **The Peerless Power Pack** - Simplicity is the key to this rugged 12-volt, 5-Amp supply. If you're looking for quick energy, here's the answer ..... KO2G 38
- **What You See Is Where You're At** - Tired of guessing your frequency? Resolve your problem to 100 Hz with this add-on digital display ..... WA8YKN 40
- **There and Back Again** - Add band-scanning to your TS-930s for under \$20 ..... KC7O 44
- **Home-Brew the Blockbuster** - In a heroic effort, WB2WIK has created the ultimate 6-meter amplifier. Its single 4-1000A delivers over 2 kW with only 20 Watts in. The power supply alone weighs 120 pounds. When this monster talks, people listen! ..... WB2WK 50
- **Broken Ox Blues** - The grid-dip oscillator is a stellar performer, but missing coils can mean big headaches. Avoid frustration by winding your own ..... W7RXV 56

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- **Harmonic-Free QRP?** - Avoid an FCC pink slip by measuring second-harmonic power with the ZS6UP reactance load ..... ZS6UP 29
- **World War Wireless** - What can you do with a pencil, a razor blade, a paper clip, and a hank of wire? Why, build a radio, of course! ..... W1BG 32
- **Instant ATV!** - W8CHK breaks through the mystique surrounding fast-scan television. You won't believe how easy it can be! ..... W8CHK 36
- **Modification Mania!** - Here are not five, not ten, but fifteen ways to perk up your HW-401 ..... AI7C 42
- **Hunt the Auto-Fox** - Has your transmitter-hunting gone sour? DFers will love chasing this wily box, and its variable skill levels give them a run for their money ..... WB6GTM 48
- **Surviving the Unthinkable: Part III** - WA8YKN outlines simple precautions that will allow your radio equipment to survive an electromagnetic pulse ..... WA8YKN 52
- **Scope That Signal** - Are you over-modulating? Is your linear linear? Find out with a station monitor you've built from scratch ..... KD6VP 56
- **A Scavenger's Radio** - Using it is easier than building it ..... KA0DMT 66

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- **The Downunda Project: Part II** - How to assemble and align the DSE 2m transceiver described last month ..... Simpson 17
- **Fighting Fire With Wire** - If 15m is hot and your antenna's not, try the V-bomb array ..... W6TYH 26
- **Brew a Coffee Ground Plane** - No cream, no sugar-just a 440 antenna that really percolates ..... WA2OVG 30
- **Takin' It to the Streets-Part I** - Work the world from your HT! Crossbanding expert WA6AXX explores the how-to of remote and auxiliary operation ..... WA6AXX 32
- **Build the Broadband Bow Tie** - It's every ham's dream: An 80m antenna with a flat swr of 1.5:1 from 3.5 to 4.0 MHz. And it couldn't be simpler ..... WD9ELG 38
- **Don't Fall for Swr Fraud** - Your feedline may be swindling you. Find out how much power you are losing and how to stop it ..... W1GV 40
- **Whip the Competition** - Improve your 2m HT's "mileage" with this custom antenna from Datsun! ..... N3DRW 42

- **Exponential Potential** - The problem: A broadband antenna fed with coax exhibits narrowband response. The solution: Use this exponential-line matching system ..... W6TYH 44
- **Wheatstones Are Not Crackers!** - Here's the slickest application of the Wheatstone circuit yet devised. The Nuller Bridge is the only instrument you'll need to adjust your antenna matching unit to peak performance ..... K4KI 50
- **A New Angle for Dipoles** - Stand them on end! Sounds odd, but W1GV presents an excellent case for HF vertical dipoles ..... W1GV 54
- **Six for Two** - Get range-tested 12 dB gain for under \$5! K.C. Jones engineered this 2m delta beam for maximum bang per buck ..... KA8RCJ 58
- **Dr. Frankenstein's CB Beam** - Ravage the countryside with ten-meter rf! Create your antenna with refuse from the Citizen's Band graveyard ..... KA3JOM 62

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- **Takin' It to the Streets-Part II** - Last month's discussion was only half of the story-now discover what remote control can do when the ShackMaster's power is unleashed! ..... WA6AXX 32
- **Above Intercept** - It is cramped and dark and freezing cold, but the Allies need information. Has Britain's secret radio fallen into enemy hands? ..... Layton 36
- **Build a 1296 Stripper** - Join the fun on 1296 MHz with WB61GP's stripline down-converter ..... WB61GP 40
- **Looking East** - Silver Eagle award-winner Bill Pasternak recalls his 25-year relationship with W2NSD and 73 ..... WA6ITF 46
- **Old Tubes Never Die!** - Discover the romance of glowing filaments ..... W6HDM 50
- **Give Your Disks a Physical** - Are you getting what you pay for? Use this simple technique to quality-inspect your valuable floppies ..... Kraska 56

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- **"Just Leave Me Here To Die!"** - In June, 1985, two VHF contesters trudged 4200 feet to the top of Slide Mountain. Fifty-pound packs, wet weather, and pernicious porcupines were simply a part of the fun ..... KT2B 14
- **Toss Out Your Tubes!** - Replace them with high-performance FETs. OA4KO shows you how ..... OA4KO/YV5
- **Improve Your Audio Report** - Are you tired of lying to your fellow amateur? Try the QRI signal reporting system. Let him know what he really sounds like ..... W2OZH 28
- **Conjure an Rf Genie** - 73's Weekend Special: A 3-22-MHz signal generator/i-f aligner you can build in under two hours ..... K1BQT 32
- **Operate OSCAR on 10 Meters?** - It's a snap-all you need is this versatile satellite converter! ..... W6IOJ 36
- **A Gentleman's Antenna** - The solution to an age-old problem: How do you fit a 160m wire onto a 40m lot? ..... WA4BLC 44
- **Probe the Unknown** - Looking for an easy way to measure rf? Use the "electric pen," a no-load active probe with real flair! ..... Bailey 46
- **It's a Dangerous Obsession** - Growing up and learning about electronics is like driving a car before you can reach the brake pedal, KB4YJ tells how he lived through it ..... KB4YJ 50
- **Convert and Converse** - Transform your C-64 Basic programs into Hamtext-readable sequential files. ..... WB9AOU, WD9ADZ 52

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- **Join the SWOT Team!** - 2m FM is fun, but using a repeater won't challenge your skill. Turn the switch to SSB and find out what ham radio is really about! ..... KA3B 26
- **One-Chip Facsimile** - We all talk about the weather; now you can see it on your Atari. You'll be amazed at how simple it is ..... WB8TPD 38
- **NOAA'S 2m UFO** - Your weather radio is a great signal source on 145.8 MHz. K9POX explains why ..... K9POX 42
- **Secrets of Cellular Radio** - Take a guided tour behind the scenes of our newest repeater ..... N1BLH 44
- **The Santec Spectacular** - Is your Santec becoming forgetful? Are its batteries going soft'? No more! Here are two quick mods that bring your hand-held to within an inch of perfection ..... W2IVS 50
- **Saga of the Willie Wand** - W5RRH learned a new technique while building this 6-element 2m beam. It's called cut and try and try and try ..... W5RRH 52

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- **Try an Inverted-Psi Wire** - Get the DX edge on 80m with a radiation angle that's almost too low! ..... W1GV/4 22
- **Selcal and State Machines** - WA7NBF takes the mystery out of this powerful technique with a hands-on selective-calling project ..... WA7NBF 28
- **Little or No Resistance** - Explore the strange world of superconduction, where current flows forever and a picosecond is an eternity ..... AJ0N 36
- **Run Silent, Run Beep** - Is your FT-227RB scanning? You won't have to guess with this easy add-on ..... PY2AUC 40
- **A Better Money-Maker** - WA6TTY stiffens up his original power supply to deliver a solid 13.8 volts at 20 Amps. The cost? Under three bucks! ..... WA6TTY 42
- **The Commodore Cable Caper** - Need a printer cable? Strapped for cash? Don't just sit there—build the darn thing! ..... KE4PC 44
- **The Perfect RTTY Filter** - Its tunable shift covers 80 to 1160 Hz with a flat gain and Q. And you can build it for less than ten dollars ! ..... WA0MRG 46
- **Double Your Computing Power!** - Try "parallel processing" with a second CoCo keyboard ..... NO8M 50
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- **New Bands for Old Rigs** - Internal or external, converter or transverter, here's how to add three WARC bands to your favorite radio ..... GW3SB 16
- **Razzle-Dazzlin' Your Azden** - Some sleight-of-hand with a fistful of parts will make your PCS-2000 a 2m star! ..... K7UKW 20
- **VIC RAMification: Part III** - Thank W6LOB for the memories ..... W6LOB 26
- **Yesterday's Circuits Today** - Remember tubes? W6HDM does. He's resurrected a half dozen of his favorite circuits and updated them with semiconductors ..... W6HDM 28

- **Up, Down, and All Around** - Fit your KDK 2016A with this ten-dollar Scan Can ..... WA2AXO 36
- **Build a Dynamic Duo** - Add a speaker/mike and a 12-V adapter to your HT ..... VE1VQ 40
- **Scanning the TR-2400** - A simple mod for lazy hams—push the button and it scans! ..... WB8IKO 42
- **The RIT Stuff** - Clarify your FT-101E's reception with this five-component modification ..... K1NYK 44
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- **Super-Selectable Bandpass Filters** - PASSE uses extraordinary methods to craft the ultimate i-f filter ..... PA0SE 54
- **Curious About Code?** - Learn (or improve) Morse from your TRS-80! You'll never find a more patient teacher ..... Lewart 60
- **WARC, Rest, and Play** - Adding 10-MHz capability to your Yaesu FT-101Z is a simple step-by-step process. In just a few hours, you can join the fun on our newest amateur band ..... K7KQ 62

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- **Faster Than A Patch, It's Speed Dialer** - Dial home while driving by simply pushing a single button on the microphone ..... K7UKW 20
- **Don't Be A Kamikaze!** - The Hara- Kiri Box is an improvement on the suicide cord that's still dangerous, but it's a lot safer than the cord ..... KA4J 30
- **132 Extra Memories for Your FT-107M** - At three cents a piece, why not? ..... LU2HP/ON6JC 32
- **Inside CoCo's ROMpak** - Store your favorite Color Computer programs in ROM-and never type "Load" again ..... WB8IKO 36
- **Build A Digital IC Trainer** - A great helper for testing components, as well as experimentation and circuit development ..... WB4YOD/PW8ZAF 40
- **Get Organized Today With Argo's Helper** - If your present QRP station is comprised of a half-dozen black boxes interconnected with several cables, then th is may be the construction project for you ..... W3BYM 44
- **Instruction Instructions** - Discover hidden savings in the last place you'd ever look-the instruction manual ..... N6HYK 50

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- **Your Bridge Over Troubled Antenna Tuning** - Is your antenna less than ideal? Put more fire in the wire ..... W3MT 24
- **Stretch the GP Antenna to the Max** - This, the simplest of all antennas, has much to recommend it ..... GW3SB/G3SB 27
- **The Care and Feeding of a Curved Linear Array Antenna System** - For low cost, very low maintenance, yet acceptable performance, try this antenna system for use in high-frequency amateur radio operations ..... N6BIS 30
- **Stacked Vee-Beam Arrays** - If 15 meters sounds dead, you're not using the right antenna! ..... W6TYH 32
- **The Match Maker** - Everyone knows that antennas and transmitters should "match." But what exactly is that? And how is it achieved? Here are the answers ..... VE3LMP 38

- **Antennas Should Be Heard, Not Seen** - Ham radio meets interior decorating! KC3HW's 2m J-pole wins the prize for unobtrusiveness ..... KC3HW 42
- **A Connoisseur's Microwave Converter** - Brent Harry set out to build not the cheapest, but the best downconverter possible. Serious microwave enthusiasts will thank him ..... Harry 45
- **Get With the Program and Speed Up Your Code** - Here's your opportunity to increase your code speed without QRM, QRN, or QSB! ..... KA2QOU 54
- **The Potabilities Are Endless!** - Dunk your next project into icky goo and discover why potting a circuit is even more fun than building it ..... KA7AWD 57
- **The Basics of Computer CW** - Here's a twist: W9ODK preprocesses Morse to make life easier for his VIC-20. The result? A Basic program that copies code from 5 to 50 words per minute ..... W9ODK 59
- **Terminal Teletype** - The last RTTY program you'll ever write for your H-89 ..... W3RWU 62
- **Malley's Manchester Monitor** - Listen in on the world's finest conversationalist-you! ..... K1NYK 66
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- **Radio to Go** - For the ham whose mike is grafted to his lips: a strap-on, carry-out radio ..... WB0WPY 68
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- **Some Guys Make It** - Classic humor from 73's cellar ..... K2ORS 46
- **Digital Simplex Repeaters** - New-wave ham radio—a marriage of packet and digital-voice technology ..... K4YKZ 48
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- **HAMS Against Drunk Driving** - How your club can aid in the fight against drunk drivers ..... KB6HQS 38
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- **Future Hams of America** - Find out what happens when 8,000 people are introduced to ham radio all at once! ..... Azzalina 44
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- **Precision Packet Tuning** - Complete plans for building what could be the world's best packet/RTTY tuning indicator. It's all digital and has a resolution of 10 Hz! ..... WB2OSZ 40
- **Seeing Packet Radio With Different Eyes** - How a blind ham copes with an inherently visual mode ..... N7FDS 48
- **So You Want To Be A Sysop?** - You may change your mind! Learn the secrets of a successful packet bulletin board station ..... WB2MNF 50
- **Birds 'N' Bauds** - Amateur satellite builders from three countries discuss what's in store for packet radio in space ..... NK6K, JA2PKI, DK1YQ, DB20S, DJ0HC/KE6MN 58
- **Connect Alarm!** - A simple add-on for your TNC that screeches when someone connects to your station. This is a one-hour project (we're timing you!) ..... K7YZZ 66
- **Survival Training For Mountaintop Digipeaters** - The amazing story of a club with a purpose: to blanket the state of California with digipeaters ..... WB6RAL 68
- **Beyond Level Two** - The philosophy of networking and the future of amateur packet radio. Read only after successfully completing pages 1-73 ..... KA9Q 74
- **Lightning Never Strikes** - These simple precautions can save your rig... or your life ..... W0WUZ

- **And If That Isn't Enough** - If you're still totally bewildered about packet, join this question-and-answer round table ..... NK6K 80
- **On The Shelf** - A bibliography of the seminal works in packet radio ..... NK6K 86
- **73's Packet Buying Guide** - At-a-glance comparisons of everything on the packet market (complete with prices) ..... Staff 88
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- **Watts My Line** - Coax, parallel feeders, or microstrip, this Basic program lets you design your own custom transmission line ..... K4IPV 36
- **Scaling the Wet Noodle** - Antennas in one-quarter time: Experiment with your favorite 160-meter ludge on 40 meters ..... W5RRH 40
- **The Missing Link** - Control your entire HF station from the convenience of your HT's tone pad ..... WB2REM 42
- **Dishing It Out On 10 GHz** - Microwave feed systems and antennas that really cook ..... WB6IGP 46
- **High and Dry** - You'll literally go through the roof over this beam mounting scheme ..... WA2OLZ 50
- **The Ramada Radiator** - It fits in a suitcase, covers all bands, and costs under \$10 to build ..... WA8WVF 52
- **Texas Tango Antenna** - Get two bands for the price of one with a tuned-coaxial-stub dipole ..... K5BTV 54
- **Trap An Amazon Aerial** - In the jungle, there are no Radio Shacks. Here's how to home-brew your own traps ..... WB4YOD/PW8ZAF 56
- **Resonate Wire Antennas** - Amateur radio's roots: Take a piece of wire and stick it in your rig. (Well, it's a little more complicated than that) ..... W0VM 60
- **Lazy U Dipole** - Here's what happens when a dipole gets the bends ..... VE7BS 64
- **CoCo's Compu-Charger** - Could this be the world's smartest NiCd conditioner? ..... K2OAW 70
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- **Tells All:** - The Heathkit HO-5404 station monitor ..... N1BLH 24

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- **Make the Switch to PIN Diodes** - Unbelievably fast, PIN diodes can drag your tube-bound transceiver into the 80s with silent switching ..... OA4KO/YV5 28
- **Shoestring Shortwave** - Remember when rigs were built on pine bases? Try KICLL's converter for old time's sake ..... K1CLL 34
- **The End of the Rope** - Some days you just want to mail your license back to the FCC ..... K9AZG 38
- **A Simple Way to Measure SSB PEP** - Sure, anybody can do it on CW, but what about that dancing voice envelope ..... W5VSR 40
- **Microwave Building Blocks: The I-f Amplifier** - What used to take a rack of tubes can now be done on one tiny chip ..... WB6IGP 42

- **The DXer's SCF** - It's deadly sharp, doesn't ring, and needs no alignment. Is this switched capacitor filter the ultimate station accessory ..... NB9K 46
- **One Band, One Transistor** - Carry your 75m net around in your pocket ..... WB2EUF 54
- **On the road:** - The DSE 440-MHz mobile transceiver ..... WB6PHE 18
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- **Commodore's RTTY Riot** - Super-simple way to put your C-64 on RTTY ..... W8CHK, WB8YOB 34
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- **Alinco DR-570T 2m/70cm Mobile Transceiver** - Sensible controls make sense! ..... NS1B 26
- **The AEA MX-6S 6 Meter SSB/CW HT** - HT SSB on 6! Now I've seen everything ..... WB6IGP 30
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- **Service Survey** - Get good service for ailing rigs ..... WB6NOA 28
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- **Ground Rules of RF Building** - Valuable guidelines for PC board RF circuitry ..... WB4EHS 25
- **The Secret of the Accessory Plug** - Xcvr to PA-getting the right drive level ..... W6YUY 36
- **The Dual-Band "J" Antenna** - Outstanding mobile or base station antenna for 146 and 220 MHz ..... W6YUY 48
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- **Build the Banker** - Handy memory bank selector for the Kenwood TS-940S ..... KB1UM 34
- **Cassette Box Special** - QRP smaller and smaller ..... KB1UM 46
- **A Simple Multiband HF Vertical Antenna** - Low cost, easy to raise ..... KA5N 89
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- **Master of CW** - MFJ's full-featured memory keyer ..... WA4BLC 30
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- **Standard Magnetic Field Generator** - Build an instrument to calibrate your gaussmeter ..... KB4ZGC 36
- **ICOM Service Survey** - It's almost painless ..... WB6NOA 40
- **Backward Inverted L Antenna** - This low-band wire antenna is a good performer on both transmit and receive ..... W1GV 45
- **The SFA on 15 Meters** - Does the job without drawing the neighbors' attention ..... KA8OGD 57
- **Memories** - Dr. Hess takes a look backward for the seventh time ..... W6CK 66
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- **You Are Here** - Two ways to prove it ..... NY9F 18
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- **High on ATV** - A marriage made in heaven! ..... KS8J 15
- **Low Power Two Meter FM Transmitter** - Inexpensive, lightweight and expendable! ..... WA4ADG 18
- **High Altitude Ballooning** - Send your rig to the edge of space! ..... WB8ELK 30
- **Yaesu Service Survey** - Refreshingly flexible ..... WB6NOA 46
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- **More BTUs for the Buck** - Inexpensive alternative to industrial heat guns ..... WA1FHB 28
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- **Make Your Own Circuit Boards** - The reliable method ..... W6WTU 36
- **Build a Portable Mast Mount** - A "spare" mount that's always ready ..... KC3YB 44
- **The Coil Tester** - Measure inductance and resonant frequency ..... N4TMI 48
- **DXDA '90** - The Dynasty grows ..... WB2DIN, Staff 81
- **The Isoloop HF Antenna 14/30** - Small, efficient and portable ..... KA7LDN, KG7GA 10
- **Fluke Model 87** - The next generation of digital multimeters ..... WB9RRT 45
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- **The SPC Transmatch** - Improved performance for 20 through 10 meters ..... W4RNL 22
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- **Solar Car Race** - Searching for an alternative ..... WB8ELK 34
- **Service Survey Wrap-Up** - Plus -where to get your old rig fixed ..... WB6NOA 38

- **The ZED LOOP Special** - An inexpensive HF beam with a new twist ..... W1XU 41
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- **DXDA '90** - The corrected list of countries ..... WB2DIN, Staff 80
- **The Signal Sentry** - Miniature touch-tone decoder and message alert ..... WB8ELK 14
- **The Yaesu FT-1000 Transceiver** - A hot performer loaded with features ..... WA4BLC 18
- **Antenna Quick-Launch System** - All you need is a strong arm and the QL system ..... W1XU 26
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- **Pack Your Seabag, "Sparks"** - Do you want to be a ship's Radio Officer? ..... N0MM 35
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- **Ten-Tee's Hercules II Model 420** - Turn your rig into a 550 watt transceiver! ..... N4LBJ 22
- **The Lightning Bolt Dual-Band VHF/UHF Quad** - Two antennas in one compact package ..... WB8ELK 30
- **The PacComm PSK-1** - Connect to the world via the Microsats! ..... WA3USG 32
- **The ICOM IC-726** - The HF + 6 road warrior ..... N1GPH 38
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- **The WB2OPA LogMaster** - A versatile HF logging program for the IBM PC ..... N8AHA, WB8ELK 34
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- **Future Modulation Amateur Television** - Sometimes called frequency modulation ..... W9NTP 32
- **Take a West Indies DXpedition?** - "No Problem, Mon!" ..... VP2E/W1HEO 34
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- **An Inexpensive 10 GHz Dish System** - The plumber's delight ..... WT0W 57
- **The Kenwood TH-27A** - A mini HT with maxi features ..... N1GPH 28
- **SHF Systems Linear Transverters for 1240 and 2304 MHz** - Explore the microwave bands with these easy-to-build kits ..... KT2B 40
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- **Hams in Space!** - SAREX II, the next generation ..... Chien 54
- **The ICOM IC-970H VHF/UHF Multiband All-Mode Transceiver** - A greatrig for both satellite and local communications ..... KA7LDN 36
- **Skymoon** - Software for EME communications ..... WA3USG 46

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- **The ESV Mod Quad** - Inexpensive performer for any band from 50 through 1296 MHz ..... WB0ESV 14
- **Collinear for Two Meters** - An inexpensive, efficient antenna ..... G3YCC 24
- **Simple SupeRX** - A super-small superhet for 80, 40, or 30m ..... WA6IVC 26
- **Pocket-Portable Seven-Band Antenna** - It's cheap, easy-to-build, and effective ..... KB4ZGC 46
- **Ten for 10** - Build a high performance, 10 meter beam for \$10 ..... KM4UL 52
- **The Happy Half Square** - Inexpensive gain in a compact package ..... W1XU 22

- **The Carolina Windom 160** - Work 160-10 meters with just one antenna ..... WA4BLC 34
- **Ameritron's AL-811 Linear Amplifier** - Get the real thing at the right price ..... WA4BLC 38
- **SV Products' WARe Band Yagi** - Model 1824/2-L - a super buy! ..... N4IBJ
- **Practical Antenna Handbook** - Useful information for beginners and pros ..... W6OAL 21

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- **The Handy Inductance Bridge** - For measuring small coils ..... KB4ZGC 11
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- **Covert Hamming** - A design for your next secret mission ..... K6BRP 21
- **Software for the HamShack, Part I** - Useful ham calculations you can program yourself! ..... WA4BLC 22
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- **A Better Tube Tester** - Check more than just DC amplification ..... WA1IAO 30
- **Apartment Antennas: A Challenge** - How to cope with a less-than-ideal QTH ..... W1GV 42
- **The JPS NIR-10** - Separate the words from the noise ..... WB2QLL 34
- **The J-Com MagicNotch Audio Filter** - A little box that locks out lids ..... N1GPH 40
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- **Three Bands With One Rock** - Versatile QRP transmitter for 80, 40 and 20m ..... WW9X 10
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- **Build the Brass Pounder's Keyer** - A memory keyer that reproduces your true CW "fist" ..... AA6GG 22
- **SPSM Mobile Mount** - Build this reliable Hustler classic ..... W6OAL 34
- **Parts Substitution** - A beginner's guide ..... KB1MW/7 40
- **Software for the Ham Shack, Part II** - Useful ham calculations you can program yourself! ..... WA4BLC 44
- **Get on the WARC Bandwagon** - You can still enjoy good DXing, even as propagation conditions decline ..... N4LBJ 50
- **The KE2AM Voice ID and Repeater Controller** - Control your repeater economically! ..... WB8ELK 12
- **Tripp Lite PR-25A and Isobar 8 GS** - Power supply and surge suppressor ..... N1GPH 38
- **SWISSLOG Version 3.66** - A complete QSO tracking system in one fast software program ..... WA3USG 46

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- **Tropo Time Is Now!** - Talk thousands of miles on the VHF/UHF bands ..... WB6NOA 14
- **Antennas by the Yard** - HT antennas that really measure up! ..... WA6TLK 22
- **The Megaloop** - Perfect for megalomaniacs ..... W1GV 29
- **Lightning Protection** - Want some peace of mind? ..... NU1A 32
- **The Flight of STS-37** - The first "all-ham" crew ..... KC4YER 34
- **Software for the Ham Shack, Part III** - Useful calculations you can program yourself! ..... WA4BLC 42
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WA3USG 26

- **SSTV with the Robot 1200C Scan Converter and the Martin Emmerson EPROM Version 4.0** - Add exciting new features to the Robot ..... WA3USG 46
- **The ATV-3 Downconverter** - Tune in to ATV with this economical kit ..... AH2AR/8 50

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- **Software for the Ham Shack, Part IV** - Useful ham calculations you can program yourself! ..... WA4BLC 32
- **Universal CAT Interface** - Control your rig with your computer! ..... K5YEF 38
- **Hope for Monolingual Hams** - If you really want to communicate! ..... WA1LBP 50
- **Pkt-GOLD Multimode** - Your software window into the world of digital communications! ..... WA1R 20
- **The TAPR METCON-1 Kit** - Add telemetry and control to your packet station ..... WB8ELK 34
- **The Kantronics KTU Telemetry Unit with Weathemode EPROM** - Remote weather observations via packet! ..... WA3USG 46

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- **Indoor 10 Meter Beam** - A 2-element "invisible" coaxial antenna ..... N9CAP
- **Economical Mobile HF Antenna** - Modify a Radio Shack CB antenna for the HF bands ..... AA6NG 26
- **DXDA Awards and Countries** - The latest update, thanks to Bob Reed WB2DIN ..... Staff 30
- **Dual-Band Vertical** - This one's for the 160 and 1750 meter bands ..... WD4PLI 38
- **The L-O-N-G Long-Wire** - What is it like to build and worka REAL long-Wire? ..... W1GV 46
- **Ham-It-Up Sweepstakes Contest Winners!** - Here's the list you've been waiting for ..... Staff 52
- **The Outbacker All-Band HF Mobile Antenna** - A 12-month road test on a tough mobile antenna from down under ..... N1GPH 12
- **Quantum Ham Battery** - Be prepared with full power for your HT ..... N1GPH 22
- **Carolina Beam** - An innovative new Windom for 80-10 meter operation! ..... WA4BLC 34

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- **A 10M Sideband Transmitter** - Add voice to your QRP station ..... NZ5G 14
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- **Microprocessor Repeater Controller, Part I** - Add versatility to your repeater system ..... WB3ESS 28
- **Low-Pass Antenna Tuner** - Match your antenna while reducing harmonics with this unique design ..... KB4ZGC 46
- **Kenwood's TH-77A Dual-Band Walkie** - Super-packed with features! ..... KB1UM 42
- **The Drake R8 Receiver** - Tune in the world with this hot new receiver ..... WA4BLC 50

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- **Half-Wave Gain Antenna** - For 450 MHz handie talkies ..... AD5X 26
- **The Heli-Hat Antenna** - An 18-inch wonder for 10-17 meters ..... KB4ZGC 32
- **Showdown in Portland** - Discover the thrill of radiosporting ..... K0OV 38
- **Microprocessor Repeater Controller, Part II** - This month, the audio board ..... WB3ESS 44
- **A Simple 10-Meter Sideband Amplifier** - Give your QRP rig a boost ..... NZ5G 52
- **The Kenwood TS-850S** - A versatile HF transceiver with a digital difference ..... N2GE 18
- **The Startek International Model 3500 Frequency Counter** - Speed, accuracy, and ease in a shirt-pocket unit ..... WB9RRT 30
- **The Solarcon A-99 Antenna** - A very economical vertical for 10-17 meters! ..... WA4BLC 36

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- **Project INSPIRE: A Space Shuttle Experiment** - Build a simple receiver to explore the wonders of the 60,000 meter band! ..... KG6EK 22
- **The QUAG-V** - A high performance and wide bandwidth antenna for VHF and UHF ..... WB3AYW 36
- **Computerized Tuning for Ramsey Receiver Kits** - It doesn't have to be expensive ..... N8KDD 42
- **Not Just Another Island** - Weekend DXpedition activates the Walrus Islands ..... NL7KH 50
- **The "Cheap and Simple" Power Supply Revisited** - Improved regulation for a classic power supply ..... WA9VLK/G0NBZ 66
- **The Ramsey 2 Meter Transceiver Kit** - Build your own high-quality FM rig the easy way ..... K1BQT 18
- **The BayCom Packet System** - Run packet without a TNC ..... WA3USG 20
- **ZD Engineering Hardline Matching Transformers** - A great way to use all of that cheap CATV cable! ..... WB9RRT 29
- **The Yaesu FT-990** - A fully-equipped transceiver for the everyday ham ..... WA4BLC 32
- **ICOM IC-2SRA 2 Meter HT and Scanner** - A full-feature 2 meter handheld with a separate wideband receiver ..... WB6NOA 46

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- **An Improved Crystal Tester** - Check out those surplus crystals with this portable circuit ..... KA4J 22
- **Build a Function Generator** - An inexpensive way to generate useful waveforms ..... KB4ZGC 28
- **One Desert Storm MARS Experience** - MARS readiness and support needed! ..... NX7T 34
- **A Direct-Reading Linear Inductance Meter** - Check out your coils with a digital voltmeter ..... W8VWX 38
- **Use Those Surplus Meters** - Find out what's inside that meter, and how it can be used ..... KB4ZGC 42
- **The 200-Channel Standard C168A Handheld** - Lot's of options in a small, small package ..... WB6NOA 24
- **The Ventenna** - The "no antennas" antenna ..... N1GPH 32
- **Secrets of RF Circuit Design** - A new reference book from a well known author ..... N3GDE 23

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- **The HANDI-Finder** - Build this versatile, accurate DFER semi kit in an evening ..... W6KOW 26
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- **The Ten-Tee Scout** - Easy, affordable and, best of all, fun! ..... WB8VGE 36

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- **A Sensitive Bandspread SWL Receiver** - Aaah, the nostalgic smell of dust burning off tubes! ..... XE2/KB6EPO 32
- **A 2 Meter Half-Kilowatt for \$1 per Watt** - Build this VHF amp using vacuum-tube technology! ..... WB2WIK/6 40
- **Using International 9096-IIA** - Xtra-flex low-loss coaxial cable ..... WB2WIK/6 48
- **The Lightning Bolt Quad** - An HF five-band, two-element, cubical quad antenna ..... AC4HF 25
- **The Diamond X2200A** - A high-gain UHF/VHF omnidirectional base station antenna ..... WB2WIK/6 28
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- **The Radar Gun Reality** - Ham scientist testifies on electromagnetic radiation ..... K6UI 30
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- **Mutiband Half-Wave Delta Loop (MHDL)** - A simple 20-10 meter antenna with an SO-39 meter bonus ..... WA6QBU 42
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- **S & S Engineering's Frequency Counter Kit** - Now you can count frequencies 'til your heart's content ..... WB8VGE 30
- **The LDG Electronics FC-1** - A small flexible fox controller and CW IDer ..... K4CHE 34

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- **Design and Build a Dummy Antenna** - A 40W, 50 ohm AF dummy load with a VSWR 1.3:1 at 500 MHz ..... VE5ZE 30
- **The Coleman (Mini)-Kilowatt** - Extend your station's working range for next to nothing ..... WB2WIK/6 53
- **Mini-Joystick Scanning** - Shift your tuning into high gear! ..... WB2WPM 65
- **The Azden PCS-7500H 6 Meter FM Transceiver** - 50 watts on 6 in an attractive, low-cost mobile ..... WB2WIK/6 22
- **The Drake SW8 World Band Shortwave Receiver** - A constant companion, at home or on the go ..... WA4BLC 38
- **JPS Communications' NRF-7** - Clean up your audio with state-of-the-art DSP ..... WB8RRT 42

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